Lawrence Livermore National Laboratory

EMERGENCY PLAN

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Approved _____ Date _____

Associate Director,
Safety, Security and Environmental Protection
Directorate and

Chair,
Emergency Preparedness Management
Committee

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EXECUTIVE SUMMARY

The Lawrence Livermore National Laboratory Emergency Plan documents the concepts for preparedness and response to Operational Emergencies. The Emergency Plan provides an overview of the roles, responsibilities, and lines of authority for the Emergency Response Organization. The Emergency Response Organization maintains the capability to respond to and mitigate the effects of hazards associated with emergencies; to direct protective actions for site personnel; to notify offsite agencies and provide protective action recommendations for the public; to recover from an emergency while limiting damage to facilities and equipment, minimizing impact to onsite operations and security; and to limiting adverse impacts to the environment.

The Emergency Plan and associated emergency plan implementing procedures identified in Attachment B, address the requirements of Department of Energy Order 151.1, Change 2, *Comprehensive Emergency Management System*, and adhere to the format of the Department of Energy emergency management guides.

A summary of the contents of each section in the Emergency Plan follows:

Section 1 Provides an introduction to the Emergency Plan by stating the mission of LLNL, followed by the purpose, scope, and concept of operations of the Emergency Plan. Site and facilities descriptions and a summary of the hazards survey/hazards assessment process for the site are included.

Section 2 Describes the overall organizational structure of the site and the Emergency Response Organization, which emphasizes responsibilities, lines of authority, succession, command and control of preparedness, and response elements.

Section 3 Describes the interface with those Federal, State, and local agencies that may be involved in a response to an Operational Emergency. Includes information on formally documented agreements with offsite agencies.

Section 4 Defines Operational Emergencies and provides an overview of the process used for categorization and classification of Operational Emergencies at the Laboratory. Discusses the emergency action levels used to declare an Operational Emergency.

Section 5	Provides the notification process for completion of onsite and offsite notifications. Also provides for communications to onsite personnel and offsite agencies.
Section 6	Provides the process for performing an initial assessment to support early decisions and the continuous process of refining those initial assessments as more information and resources become available.
Section 7	Outlines protective actions based on protective action guides and emergency response planning guidelines, defines the Laboratory emergency planning zone, and provides information on personnel accountability, emergency evacuation, communications, and termination of protective actions. Provides general guidelines for reentry during an Operational Emergency.
Section 8	Describes onsite medical facilities and capabilities, staff, and equipment. Describes mutual aid agreements for offsite medical assistance.
Section 9	Establishes criteria for termination of an Operational Emergency and the transition to the recovery phase.
Section 10	Describes the program and organization to provide information about the emergency to the media and the public. Includes a discussion of the Joint Information Center.
Section 11	Describes emergency response facilities and equipment that might be used during an emergency or recovery.
Section 12	Establishes the requirements for emergency preparedness training and drills for elements of the emergency response organization and describes training structure.
Section 13	Outlines the process for scheduling, coordinating, conducting, and evaluating emergency preparedness exercises.
Section 14	Describes emergency preparedness program administration, document control, and self-assessment.

1 INTRODUCTION

1.1 Purpose

The Lawrence Livermore National Laboratory (LLNL) uses an integrated emergency management system to ensure effective response to Operational Emergencies. This Emergency Plan (EPlan) establishes planning and preparedness, conceptual response to and recovery from Operational Emergencies, and internal emergency preparedness readiness assurance. The integrated emergency management system is intended to:

- Protect onsite and offsite personnel who could be impacted by an Operational Emergency at LLNL
- Protect the environment from adverse impacts
- Protect national assets by limiting damage to facilities and equipment and minimizing the impact to operations and security

This EPlan establishes the requirements for the Emergency Response Organization (ERO) and provides for the implementation of response, communication, mitigation, and recovery actions through the emergency plan implementing procedures (EPIPs). The EPlan also provides the interfaces and coordination with offsite Federal, State, local, and private agencies that ensure community awareness and protection through notifications, protective action recommendations, and mutual aid.

This EPlan implements the emergency planning requirements of the U.S. Department of Energy (DOE) Order 151.1, Change 2, *Comprehensive Management System*, and the guidance outlined in supporting Emergency Management Guides.

1.1.1 Update of the Emergency Plan and Emergency Plan Implementing Procedures

The EPlan and EPIPs are reviewed annually and revised as needed. A revision involves a substantive change, such as, work processes, work scope, performance responsibilities, work processes that mitigate systematic hazards, and requirement changes. Minor revisions in EPIPs such as, adding, changing, or deleting the use of specific forms, can be completed at any time. EPIP-142, *Emergency Preparedness Document Development and Maintenance* contains more information on the revision processes.

The associate director for Safety, Security and Environmental Protection (SSEP) directorate, LLNL managers for the Environmental Protection Department, the Hazards Control Department, the Health Services Department, Plant Services, the Public Affairs Office, the Safeguards & Security Department, and the Emergency Preparedness Section leader review updates to the

EPlan. The review and signature of the SSEP associate director (and chair of the LLNL Emergency Preparedness Management Committee (EPMC) represents LLNL approval.

1.1.2 Distribution of Copies

Controlled copies of the EPlan are stored in the emergency preparedness section files and provided to the Nuclear Security Administration /Livermore Site Office (NNSA/LSO)'s Emergency Communications Center (ECC). "Information Only" copies of the EPlan are offered to offsite agencies participating in a mutual aid agreement with LLNL. (Agencies are listed in Attachment D.)

1.2 Scope

This EPlan provides a comprehensive description of emergency preparedness and response to Operational Emergencies, as defined in DOE O 151.1. The EPlan applies to the Livermore site, and LLNL facilities contained therein; additionally, it applies to the employees, visitors, and contractors performing work onsite for the Laboratory as provided by law and/or contract.

1.3 Concept of Operations

This EPlan is based upon a hazards survey and hazards assessments developed by the emergency preparedness section. These documents conform with the requirements of DOE O 151.1 and apply the methodology described in DOE G 151.1 Volume 2. Additional information concerning the hazard survey and hazards assessment is contained in Section 1.4.1.2.

When an Operational Emergency occurs, the EPlan, through the EPIPs, is invoked for response to the emergency. Routinely designated LLNL emergency responders, such as, fire, HazMat, medical/emergency medical services, and Safeguards & Security Department /law enforcement provide on-scene response. The Incident Commander (IC) directs on-scene emergency response.

The Laboratory emergency duty officer (LEDO), who is onsite or on call at all times, represents the Laboratory director. Emergency management, including policy, employee and public information, and support for Operational Emergencies is directed from the Emergency Operations Center (EOC) by the on-duty LEDO/emergency director (ED).

Support to the EOC is provided by operations support centers (OSCs). The LEDO/ED may activate OSCs for the Environmental Protection Department, the Hazards Control Department, the Health Services Department, Plant Services, the Public Affairs Office, the Safeguards and Security Department, and Site 300. The OSCs have internal plans and procedures for their specific emergency management support functions.

The Executive Business Coordination Center (EBCC) is an emergency response facility where the Laboratory director and/or designated executive staff gather to monitor the progress of the emergency and provide business continuity. A LEDO is assigned by the ED to provide liaison with the EOC.

The ECC oversees the site response and provides support, assistance, and guidance to the site contractor EOC. The ECC also provides information to NNSA/LSO management, the NNSA/DOE headquarters (HQ) EOC, members of the press, and coordinates with other Federal agencies on a local level as necessary. In the event that an emergency situation requires additional assets, assistance, including long-term monitoring, the ECC will coordinate notification activities with other NNSA/DOE, local and Federal agencies.

1.3.1 The LLNL Integrated Emergency Management System

The LLNL integrated emergency management system considers and incorporates responses to a broad spectrum of hazards and possible consequences in its planning. The extent of emergency planning and preparedness for a particular LLNL building or facility corresponds to the type and amount of hazards and the potential effects on workers, the public, the environment and/or national security. LLNL also incorporates lessons learned from simulated and actual emergency situations that have occurred at this site, other DOE sites, or similar hazardous material facilities.

The on-scene response and emergency management support described above comprise a portion of the overall integrated emergency management system at LLNL. The system is based on the LLNL commitment to Integrated Safety Management.

Integrated Safety Management, as described in LLNL's *Environment, Safety & Health Manual* (*ES&H Manual*), Volume I, Part 2, Document 2.1, "Laboratory and ES&H Policies, General Worker Responsibilities, and Integrated Safety Management," is the first and primary level of defense against undesired and unexpected events. The Fire Department, the Health Services Department, and the Safeguards & Security Department provide the second level, dealing with incidents that are mitigated and resolved primarily using onsite assets. If an incident should escalate beyond the capabilities of onsite assets, appropriate notification ensures that mutual aid can be invoked at the third level of defense through existing local, State, and Federal agreements.

This graded response is based on Integrated Safety Management and the *ES&H Manual.* The LLNL EPlan. Internal and external reviewers routinely assess these defining documents against current standards. The emergency preparedness process is reviewed through self-assessment, LLNL assurance programs, annual exercises, NNSA/LSO oversight, and NNSA/DOE-HQ review. NNSA/DOE-HQ reviewers include the Office of Security and Emergency Operations and the Office of Independent Oversight and Performance Assurance.

The integrated emergency management system at LLNL also supports the local area emergency response and mutual aid. This integration ensures successful working relations, local awareness of LLNL as a community partner, the California Standardized Emergency Management System, and continuous validation of LLNL's integrated response capability.

1.3.2 Declaration of an Operational Emergency

An Operational Emergency may not require further classification, or it may be classified as an Alert, Site Area Emergency, or General Emergency by the Fire Department Duty Chief when the IC determines that an unplanned, significant event poses a real or potential threat to safety, health, or the environment. Additionally, the Safeguards & Security Department may inform the Duty Chief/IC that an Operational Emergency should be declared, based on safeguards and

security and/or law enforcement issues. See the EPlan, Section 4, for specifics on Operational Emergency categorization and classification.

1.3.3 Reentry

The Duty Chief/IC and the ED will determine when an emergency scene is stable and reentry can occur. The appropriate environment, safety and health (ES&H) team provides technical evaluation support. See the EPlan, Section 2, for specifics on emergency management personnel, organization, and responsibilities.

1.3.4 Operational Emergency Termination and Recovery

The emergency will be terminated when the emergency condition is stabilized and the Duty Chief/IC, ED, the emergency management team (EMT) and offsite decision-makers determine there is no longer a threat to employee safety, the public, the environment, or national security. See the EPlan, Section 9, for emergency termination and recovery.

1.4 Site Description

1.4.1 Overview Including Function and Mission

LLNL is a premier applied-science national laboratory. The Laboratory's primary mission is to ensure that the nation's nuclear weapons remain safe, secure, and reliable and to prevent the spread and use of nuclear weapons worldwide. This mission enables LLNL to conduct programs in advanced defense technologies, energy, environment, biosciences, and basic science to apply Livermore's unique capabilities, and to enhance the competencies needed for our national security mission.

The Laboratory serves as a resource to U.S. government and a partner with industry and academia. Laboratory employees work with industrial and academic partners to increase national economic competitiveness and improve science education. The Laboratory's mission is dynamic and has been changing over the years to meet emerging national needs.

To meet these needs, the DOE and the University of California signed Prime Contract W-7 405-ENG-48 (Contract 48) codifying the partnership that owns, manages, and operates LLNL.

1.4.1.1 Detailed Facility Description

The specific facilities that, by the nature of the hazard present, could cause an emergency to be declared are described in detail in their respective Emergency Preparedness Hazard Assessment (EPHA) documents. The EPHAs describe facility mission, location, floor plans, utilities, ventilation, fire protection systems, cadre of workers, processes, and operations.

1.4.1.2 Hazards Survey and Hazards Assessment

In accordance with Section 1, Chapter 4 of DOE O 151.1, "Comprehensive Emergency Management System," the inventories of the Livermore site and Site 300 facilities were compared with the threshold planning quantities listed in 40 CFR 355, Appendix A; in

40 CFR 68.130; in 29 CFR 1910.119; and the radiological quantities listed in 10 CFR 30.72. Facilities with inventory of a particular material in excess of these published values requires further evaluation. The results of this survey are summarized in Table HS-1 of the current version of the *Emergency Preparedness Hazards Survey*. Most of the facilities listed do not require a quantitative EPHA.

The inventories of hazardous materials further evaluated for emergency preparedness and planning purposes are derived from authorization basis documentation (safety analysis reports, hazard analysis reports, and screening documents) to determine the maximum authorized quantities. The facility's facility safety plans (FSPs) and operational safety plans (OSPs) are also reviewed to determine administrative limits of materials as permitted by authorization basis documents and implemented by integration work sheets (IWSs) and the FSP/OSP process in accordance with the LLNL *ES&H Manual*, Part 3: "Safety Analysis and Work Plans and Procedures." If explicit inventory limits are not identified, the maximum evaluation quantity for specific materials is based upon facility classification or expected or historical maximum quantities, as appropriate. This process, including requirements for revisions and application of EPHA information as the technical basis for emergency planning, is described in greater detail in EPIP-61, *Emergency Preparedness Hazards Survey and Hazards Assessment.*

1.4.1.2.1 Facilities Having Potential for Operational Emergencies Requiring Classification

Based on hazardous material inventory information it has been confirmed by discussion with facility managers, health physicists, and industrial hygienists, and by walkthroughs by safety analysts, that a number of facilities have the potential for Operational Emergencies requiring classification per DOE O 151.1. These facilities need further evaluation to determine whether or not EPHAs are required. To ensure that hazardous materials posing plume release impacts that may produce significant consequences outside the facility are adequately considered, those hazardous materials' inventories potentially producing a Site Area Emergency or General Emergency will be included in the quantitative assessment. Based upon historical data and previous analyses, a number of buildings or facilities require EPHA-type quantitative hazards analyses. This evaluation is summarized in the emergency preparedness hazards survey (EPHS). Other listed buildings in the EPHS are categorized as "Facilities Having No Potential For Operational Emergencies Requiring Classification."

1.4.1.2.2 Facilities and Operations Located Outside LLNL that Might Impact the Livermore Site and Site 300

There are offsite (non-DOE) facilities identified in the EPHS that might negatively impact the Livermore site by the release of hazardous chemicals (chlorine gas and ammonia gas). There are no such facilities identified in the Site 300 vicinity. The Sandia site (located directly south of LLNL) is covered by their Base Program.

Vehicles can haul hazardous materials on roads adjacent to the Livermore site and on Corral Hollow road south of Site 300. However, the main thoroughfare is Interstate 580, which is approximately one mile north of both the Livermore site and the northern boundary of Site 300. A railroad runs approximately one-quarter of a mile north of the Livermore site and one-and-a-

half miles north of the northern boundary of Site 300. The manager of train operations reports that train engineers for Union Pacific Rail Road always carry a manifest as well as emergency action plans dealing with the particular contents of a given train. Release of toxic materials from vehicles or trains could negatively impact either site. Grass fires originating offsite could impact Site 300 outer boundaries. The combination of gravel, asphalt, and concrete as roadway, work area, and building construction materials, along with onsite controlled burns, would limit combustible materials available to burn and expose onsite personnel and materials to such fires.

1.4.1.2.3 Facilities Screened for Hazards Assessments

The processes used to screen the hazardous materials in the buildings is described in detail in the EPHS. Hazards existing at LLNL include chemical hazards, such as, phosphine, uranium, hydrogen chloride, chlorine, and sodium hydroxide. Radiological hazards include plutonium, tritium, transuranic wastes, and Americium-241. The latest Emergency Readiness Assurance Plan (ERAP) contains annually updated information on the EPHS, EPHAs, and tabulated information related to significant radiological and non-radiological hazards present in LLNL buildings and facilities.

1.4.2 Physical Attributes of the Site

LLNL consists of two sites, the main laboratory site located in Livermore, California (Livermore site) in Alameda County, and the Experimental Test Site (Site 300) located near Tracy, California on the border between San Joaquin and Alameda counties. (see Figures 1.1 and 1.2).

The Livermore site is located approximately forty miles east of San Francisco in the Livermore valley in southern Alameda County, State of California. The downtown area of the City of Livermore lies about five kilometers to the west of the Livermore site. In addition to Livermore, notable urban areas to the west of LLNL are the cities of Pleasanton, Dublin, Danville, and San Ramon, and the densely populated San Francisco Bay area.

Urban areas lying in the general northerly direction from LLNL are the cities of Concord, Walnut Creek, Pittsburg, and Antioch, while Tracy, Manteca, Stockton, and Modesto are to the east. To the southwest lie the densely populated cities of Santa Clara County, which includes San Jose.

The Livermore site, which is roughly one square mile, is located in the southeastern part of the Livermore valley. The valley is situated in a section of the California Coast Range that lies between San Francisco Bay on the west and the northern San Joaquin valley to the east. The Livermore valley is primarily of low relief, although it does contain scattered groups of hills that rise from 300 to 600 meters above the valley floor.

Details on the geography, topography, demography, meteorology, natural phenomena, transportation systems, and utilities can be found in the Environmental Impact Statement/Environmental Impact Report for the Livermore site, the *Environmental Report 2001* or the safety analysis reports.

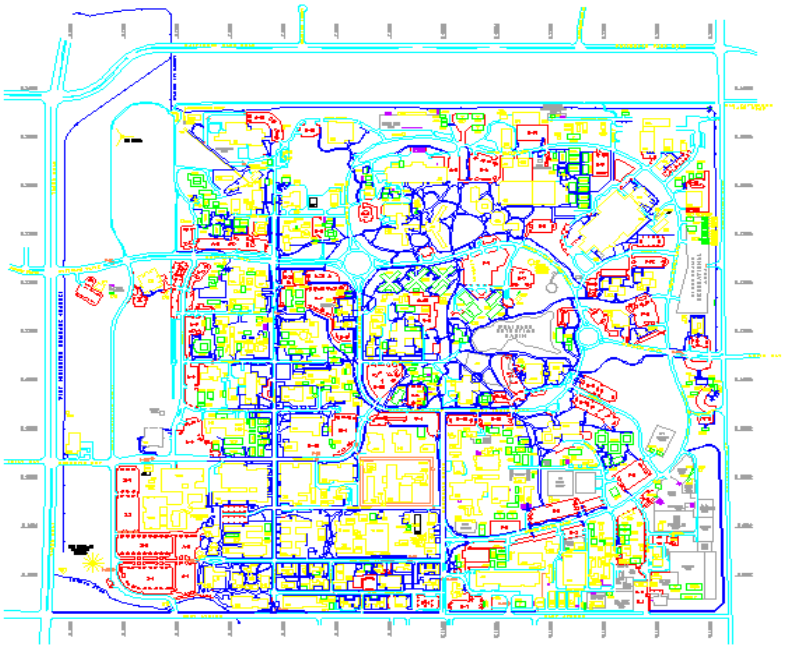

Figure 1.1 Livermore Site

Figure 1.2 Site 300

2 Emergency Response Organization

2.1 LLNL Organization

The University of California operates LLNL for the DOE under Contract 48 between the University and DOE. The University of California organization chart applicable to the EPlan is:

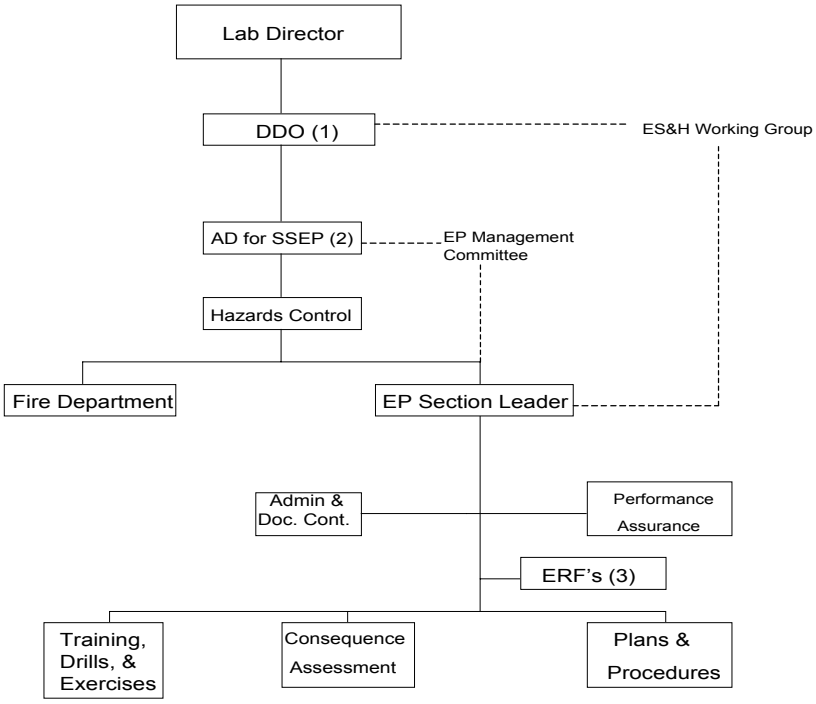

Figure 2.1 LLNL Organization

2.1.1 Emergency Preparedness Responsibilities

The Laboratory director is responsible for the safe operation of LLNL. Two deputy directors, a Laboratory executive officer, twelve associate directors, and a chief financial officer assist the director in the mission to provide guidance and direction for LLNL. The director has the authority and responsibility to ensure the Laboratory complies with applicable DOE Orders and regulations as well as other Federal, State, and local regulations.

The director has delegated responsibility for operational activities, including emergency management, to the deputy director for operations. The SSEP associate director, as chair of the EPMC is responsible for management oversight of emergency preparedness and integration with other ES&H activities, including emergency management.

The department head for the Hazards Control Department is responsible for the direction of the Emergency Preparedness Section.

The Emergency Preparedness Section leader is responsible for emergency planning and preparedness, including assignment and closure of commitment and corrective action tracking items.

The Emergency Preparedness Section administration specialists are responsible for Emergency Preparedness Section files and administrative duties, as assigned by the section leader.

The Emergency Preparedness Section emergency response facilities associate is responsible for the readiness and maintenance of the Emergency Operations Center (EOC) and other special projects, as assigned by the section leader.

The Emergency Preparedness Section performance assurance specialist is responsible for assessment coordination, commitment tracking and coordination, internal assessment, and the *Emergency Readiness Assurance Plan.*

The Plans and procedures specialist is responsible for maintaining, reviewing, and updating the EPlan, EPIPs, facility-specific plans and procedures, and other internal Emergency Preparedness Section plans and procedures.

The Emergency Preparedness Section training, drills and exercise specialists are responsible for ERO training, records coordination, exercise and drill development, drill conduct, and drill/exercise corrective action coordination with the performance assurance specialist.

The Emergency Preparedness Section consequence assessment analysts coordinate hazard surveys and assessments. They are matrix support from the Authorization Basis Section.

2.1.2 Committees

The EPMC was established to ensure high-level management attention in the multiple disciplines affecting emergency preparedness. The EPMC includes managers from SSEP, including the Environmental Protection Department, the Hazards Control Department, the Health Services Department, the Safeguards & Security Department; managers from Plant Services and Public Affairs; and a representative from the LEDO organization. The EPMC meets on a bi-monthly basis.

2.1.2.1 Emergency Preparedness Drill and Exercise Planning Committee

The Emergency Preparedness Drill and Exercise Planning Committee (EPDEPC) is composed of representatives from each LLNL EMT organization, the Health Services Department, and offsite community partner organizations that have indicated an interest in drill and exercise planning and execution. The EPDEPC is chartered by the EPMC to plan, document, and conduct the annual exercise and drills. The EPDEPC meets on a monthly basis throughout the planning cycles and implements EPIP-131, *Exercises.*

2.1.2.2 Valley Emergency Preparedness Working Group

The Valley Emergency Preparedness Working Group (VEPWG) has been formed to facilitate the sharing of emergency preparedness and planning information between the Laboratory and those offsite agencies and entities responsible for emergency response and protection of workers, the public, and the environment, with which the Laboratory may interact during Operational Emergencies. The VEPWG meets quarterly.

2.2 Emergency Direction and Control

The Laboratory director has delegated to the LEDO the authority for protecting the health and safety of LLNL employees, the public, and the environment, and for maintaining the security of the facility during an emergency. LEDOs are senior Laboratory managers, appointed in writing by the director, who have accepted responsibility for managing institutional response, and will assume the role of ED for Operational Emergencies.

The LLNL ERO consists of a two-tiered organizational approach for responding to Operational Emergencies (see Figure 2.2). EMTs at each level provide for command and control of the emergency response efforts. The IC is in charge at the scene and the ED is in charge of the overall site-wide response efforts.

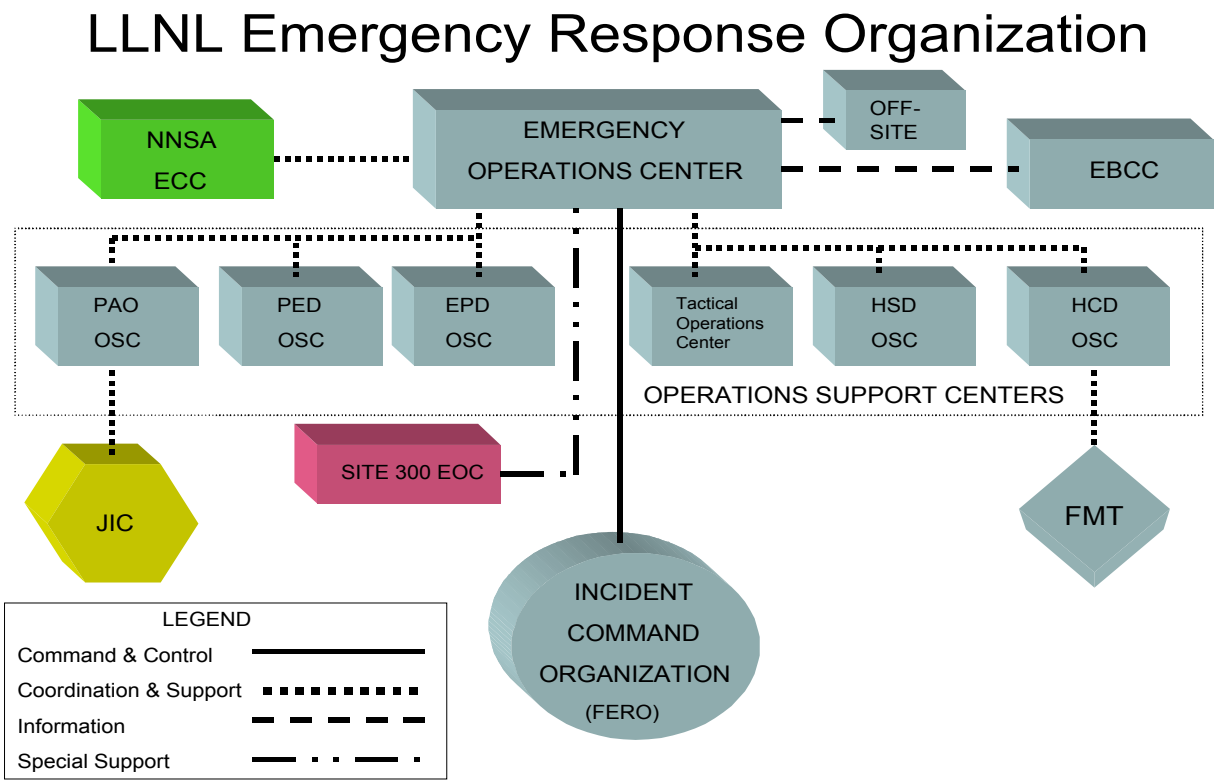

Figure 2.2 LLNL Emergency Response Organization

2.2.1 Succession of Authority

When an event requires activation of the ERO/EOC, the on-duty LEDO becomes the ED and the back-up LEDO becomes the response manager. If an ED becomes unable to perform his or her responsibilities, the succession of command is the response manager followed by any other LEDO.

2.2.2 General Concept of Operations

- Any person discovering an abnormal event/condition shall immediately notify Fire Dispatch or their supervisor.
- The twenty-four-hour notification point for LLNL is Fire Dispatch. Fire Dispatch initiates response by notifying appropriate onsite emergency resources, typically under the command/control of the IC.
- The IC/Duty Chief will gather information sufficient to determine the categorization/classification of the event/situation and implement initial protective actions and, if required, provide protective action recommendations to appropriate offsite authorities.
- Upon categorization of an Operational Emergency, the Duty Chief assumes the role of ED, activates the appropriate level of the ERO, initiates appropriate notifications, including the LEDO, and manages the emergency as the ED until relieved by the EOC ED (see Figure 2.3).
- During localized Operational Emergencies at Site 300, the Site 300 manager or designated alternate serves as the ED. This ED coordinates the emergency activities of site personnel and equipment and keeps the LEDO apprised at all times. The LEDO may chose to activate the EOC at the Livermore site for support of the Operational Emergency at Site 300.

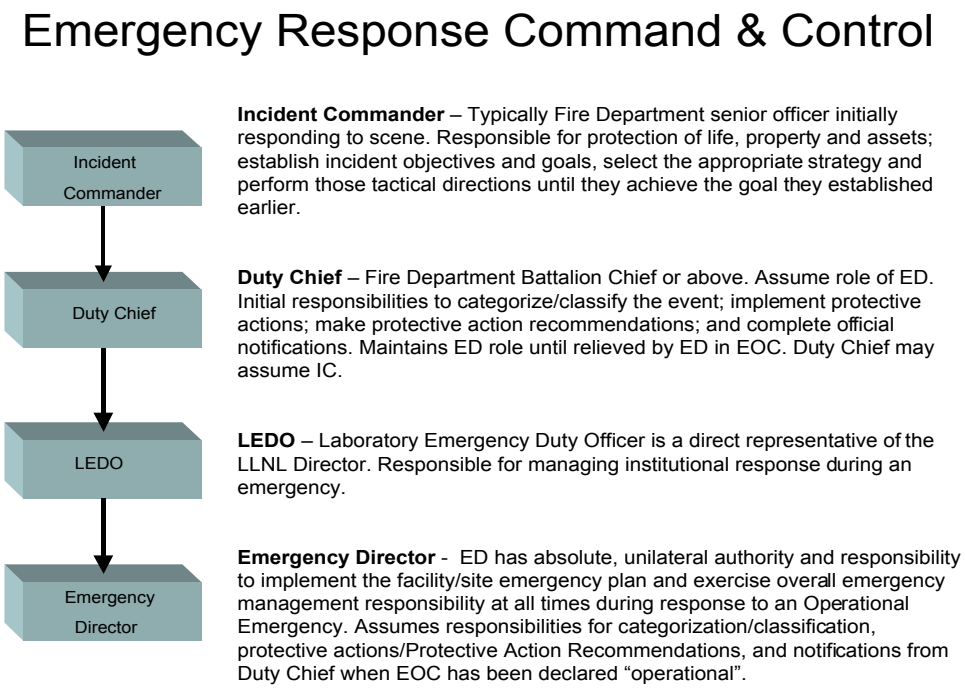

Figure 2.3 Emergency Response Command and Control

2.2.3 Areas of Responsibility Command and Control

- Emergency response efforts and resources committed to the incident scene shall be under the control of the IC/Duty Chief.
- Emergency response efforts and resources used within the LLNL site boundary, but outside the incident scene, shall be under the control of the EOC.
- LLNL emergency response efforts and resources used outside the LLNL site boundary shall be under the control of the EOC.
- Authority to commit DOE/NNSA resources rests with the DOE/NNSA emergency manager.

2.3 Emergency Management Operations and Personnel

2.3.1 Field Emergency Response Organization

The Field Emergency Response Organization is called out to respond and mitigate the emergency situation. The Emergency Response Organization operates under the Incident Command System and is operational within minutes of activation.

To ensure an acceptable level of emergency response capability, the size and configuration of the Field Emergency Response Organization is maintained to provide an overall response capability that includes the application of the necessary level of resources to mitigate consequences to workers, the public, the environment, national security and to initiate recovery from an Operational Emergency.

The Field Emergency Response Organization consists of personnel from Fire Rescue, HAZMAT, emergency medical, the Safeguards & Security Department, and the ES&H teams.

2.3.2 Emergency Operations Center

The general composition of the EOC consists of representatives from LLNL and NNSA. Typical EOC cadre configuration is shown in Figure 2.4. The procedure for the EOC is EPIP-111, *Activation and Operation of the Emergency Operations Center.*

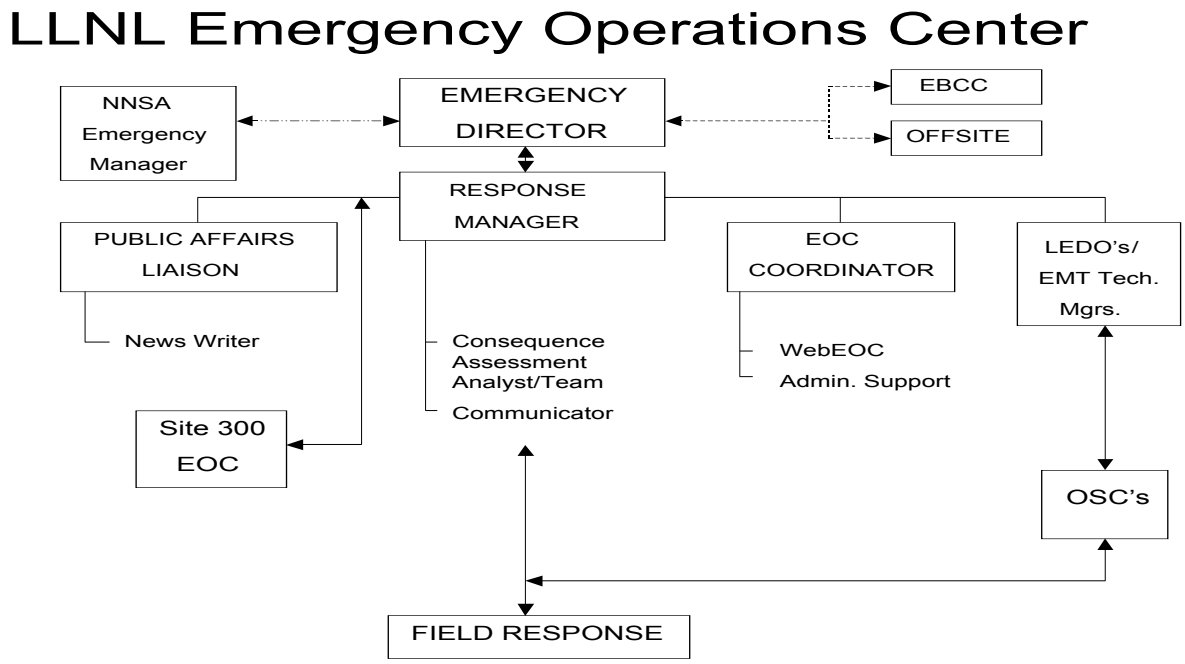

Figure 2.4 Emergency Operations Center

2.3.3 Emergency Operations Center Emergency Management Team

In addition to the ED and response manager, the EMT is made up of representatives from NNSA and the following five organizations.

- The Hazards Control Department
- The Environmental Protection Department
- The Safeguards & Security Department
- Plant Services
- Public Affairs Office

The ED is responsible for the following:

- Maintain overall command and control of the LLNL emergency response (non-delegable duty), unless relieved by an authorized Federal agency.
- Commit LLNL resources.
- Determine and approve emergency classifications and offsite protective action recommendations (non-delegable duty).

- Provide emergency status reports to the other appropriate EMTs (Federal, State, and local) on a continuing basis until the emergency is terminated.
- Review and approve emergency news releases and offsite notification forms (non-delegable duty).
- Approve termination of the Operational Emergency (non-delegable duty).
- Interface with NNSA managers.
- Provide oversight for initial recovery planning.

The response manager is responsible for the following:

- Directly supports the ED in matters of personnel and resource management allocation, response planning, and coordination of EOC activities.
- Coordinates and provides liaison between the ED and the EMT.
- Assist the ED in development and prioritization of long-range mitigation plans, strategies, and activities, in coordination with the IC.

The EMT representatives are responsible for the following:

- Providing liaison and communication between the EOC and their respective OSCs to acquire support for the emergency response.
- Keeping the Director's Office and the University of California Office of the President informed of the event through the EBCC.
- The NNSA EMT representative serves as the NNSA emergency manager, as well as liaison with the ECC.

2.3.3.1 Emergency Operations Center Staff

The EOC provides administrative/clerical support for the operation of the EOC. The EOC staff consists of an EOC Coordinator, a WebEOC operator and administrative support.

2.3.3.2 National Nuclear Security Administration/Livermore Site Office Staff

NNSA/LSO staff support response oversight activities and communications with the ECC.

2.3.4 Operation Support Centers

The OSCs are the Laboratory's technical support offices. They provide this support to their respective members of the EMT and manage their field and/or regulatory responses from these centers, which are located at various sites throughout the Laboratory. These centers are connected with the EOC via the WebEOC system and by telephone. Individual OSC plans outline the operations specific to each OSC's response activities.

2.3.4.1 Environmental Protection Department

The Environmental Protection Department staff is responsible for evaluating the emergency situation to determine potential or actual impacts to the environment; meeting regulatory reporting requirements; marshaling necessary personnel to assist in the response, cleanup, and

disposal of hazardous substances; and notifying Federal, State, and local agencies on environmental issues.

2.3.4.2 Hazards Control Department

The Hazards Control Department provides response teams with expertise in explosives safety, fire protection, health physics, industrial hygiene, industrial safety, and criticality safety. Action and status information is summarized and relayed to and from the EOC.

2.3.4.3 Health Services Department

The Health Services Department provides medical management of incident casualties, including medical decontamination.

2.3.4.4 Plant Services

The Plant Services coordinates and controls personnel, equipment, and resources for plant maintenance and utilities. Action and status information is summarized and relayed to and from the EOC.

2.3.4.5 Public Affairs Office

The Public Affairs Office coordinates and directs the release of information to employees and the public. It also functions as the focal point for outside media inquiries associated with the emergency and coordinates activities at the Joint Information Center (JIC), if activated.

2.3.4.6 Safeguards & Security Department

The Tactical Operations Center supports the Laboratory's EMT in Operational Emergency response. If the emergency is security driven, the center serves as the primary focal point for the IC. The Tactical Operations Center also serves as the point of contact for outside law enforcement agencies.

2.3.4.7 Site 300

The Site 300 EOC coordinates the activities of Site 300 and reports those results to the LEDO, or the ED if the Livermore site EOC is operational. In addition to the emergency response resources integral to Site 300, additional support may be drawn from the Livermore site.

2.3.5 National Nuclear Security Administration/Livermore Site Office Emergency Communications Center

The ECC oversees the site response and provides support, assistance, and guidance to the site contractor EOC. The ECC also provides information to NNSA/LSO management, the NNSA/DOE-HQ EOC, members of the press, and coordinates with other Federal agencies on a local level, as necessary.

2.3.6 Executive Business Coordination Center

The EBCC is an emergency response facility located within the Laboratory where the Laboratory director and/or designated executive staff gather to monitor the progress of the emergency and provide business continuity. A LEDO is assigned by the ED to provide liaison with the EOC.

2.4 Activation of the Emergency Response Organization and Response Facilities

In the event of an Operational Emergency, the Duty Chief will:

1. Activate onsite emergency response personnel, typically under command and control of the IC
2. Notify the LEDO
3. Activate the EOC and OSCs, based on event classification and in accordance with the EPlan and implementing procedures (see Table 2.1)
4. Provide initial offsite notifications.

The on-duty dispatcher will engage the Communicator!™ (the Communicator) to summon the requested resources. The Communicator is a digital call/paging system. A back-up paging system is also available if the Communicator becomes disabled.

The time to staff the EOC during normal working hours is less than one hour; during non-working hours the time is less than two hours. Minimum staffing for the EOC to be declared "operational" consists of an ED, an EOC coordinator, a consequence assessment analyst, and the WebEOC operator. EPIP-111, *Activation and Operation of the Emergency Operations Center,* provides detailed implementation guidance.

Table 2.1 Activation of Emergency Operations Facilities and Selected Response Assets

	EOC	OSCs	JIC	Monitoring Teams
Operational Emergency (Not Requiring Further Classification	Note 1	Note 1	Note 2	No
Alert	Note 1	Note 1	Note 2	Note 1
Site Area Emergency	Yes	Yes	Note 2	Yes
General Emergency	Yes	Yes	Yes	Yes

Note 1: At the discretion of the ED/LEDO
Note 2: Public Affairs option, depending upon the nature of the event

Declaration of an Operational Emergency may require the activation of the emergency response centers and the availability of personnel and resources to continuously assess pertinent

information for decisions makers; conduct appropriate assessments, investigation, or preliminary sampling and monitoring; mitigate the severity of the event consequences; and prepare for other response actions should the situation become more serious and require additional ERO mobilization.

At the declaration of an Alert the ED/LEDO may activate emergency response facilities. These facilities provide personnel and resources to continuously assess pertinent information for the appropriate decision makers (for example, NNSA, offsite authorities, and the public); conduct appropriate assessments, investigations, or preliminary sampling and monitoring; mitigate the severity of the event consequences; and prepare for other response actions should the situation become more serious requiring additional ERO mobilization.

Declaration of a Site Area Emergency requires activation of emergency response facilities including the responses listed under Alert, in addition to initiation of predetermined protective actions for onsite personnel; notification and assembly of additional emergency response personnel and equipment to activate response centers and to establish communications, consultation, and liaison with offsite authorities; provision of information to the public and media; implementation of protective actions; and mobilization of appropriate emergency response groups of protective/security forces for immediate dispatch should the situation become more serious.

Declaration of a General Emergency requires the same response as for a Site Area Emergency plus the notification of offsite authorities to provide recommendations for predetermined public protective actions and the possible activation of the public warning systems.

2.5 Other Emergency Response Assets

2.5.1 Field Monitoring Teams

When required, the Hazard Control Department and the Environmental Protection Department provide onsite (outside the immediate incident scene) and offsite monitoring capabilities through the use of a pool of team members. When an emergency classification of Site Area Emergency or General Emergency is declared, the field monitoring team will be called in to supply real-time monitoring data to verify the results of the analytical models. Field monitoring data is also used to support the adequacy of emergency response actions taken to protect employees and the public. The ED and/or consequence assessment analyst will request the activation of field monitoring team through the Hazard Control Department OSC.

Prior to any deployment, the FMTs will have an approved monitoring plan. When teams are being deployed onsite only, the Hazard Control Department OSC commander will review and approve the monitoring plan but in the case of offsite deployment, the ED will provide final review and approval.

2.5.2 Technical Support

A Health Services representative may be requested to advise the EMT on issues including health implications of emergency situations, triage, treatment, and transport of injured individuals.

The National Atmospheric Release Advisory Center (NARAC) may be requested to advise the EMT on the implications of toxic or radiological releases. NARAC, a part of LLNL's Energy and Environment Directorate, provides real-time assessments of the consequences from an atmospheric release of radioactive or toxic material.

Using professional staff, numerical models, computer systems, and network links about the country, NARAC can transmit information about an accident, exercise, or potential accident in the form of graphic plots of contours of dose and/or air concentration and ground deposition of toxic materials. This service can also be used to support a DOE-authorized offsite response.

2.5.3 Credibility Assessment

A credibility assessment team member may advise the EMT through the Safeguards & Security Department manager about the credibility of any potential incident such as terrorist activities or bomb threats.

3 OFFSITE RESPONSE INTERFACES

3.1 Overview

In the event of an emergency at LLNL, a number of resources are available for mitigation, reentry, and recovery activities associated with the response. It is the purpose of this section to briefly describe those Federal, State, local, and private agencies that may be involved in a response. In addition, the interfaces between LLNL and these agencies are discussed, including formally documented agreements.

The LLNL Fire Department is the primary point of contact with offsite agencies for emergency planning, preparedness, and response. The Fire Department has frequent on-going contacts with local response agencies, through mutual aid agreements and actual response. This includes, but is not limited to, offsite planning coordination with LLNL, inter-agency meetings, and information transfer. The LLNL Public Affairs Office is the primary point of contact with offsite agencies in the areas of public education.

Memoranda of Understanding (MOUs) and mutual aid agreements exist among specific functional LLNL organizations and departments and their counterparts. The Safeguards & Security Department develops and signs security/law enforcement-related MOUs for LLNL. The Fire Department develops and signs MOUs related to the fire/emergency medical services/HAZMAT arena. The Hazards Control Department and the Health Services Department develop and sign MOUs associated with local medical facilities. Attachment D, Memoranda of Understanding, lists the existing MOUs/MOAs.

In addition, DOE/NNSA maintains a number of emergency response assets and inter-agency agreements with other Federal agencies that may be called upon for support.

3.1.1 Department of Energy/National Nuclear Security Administration

DOE/NNSA is the lead Federal agency for emergencies at LLNL, except for certain security situations when the Federal Bureau of Investigation (FBI) may be the lead. The resources available from DOE/NNSA are extensive and include those from Federal agencies that are part of the *Federal Radiological Emergency Response Plan*. These assets include:

- Aerial Monitoring System
- Atmospheric Release Advisory Capability
- Accident Response Group
- Federal Radiological Monitoring and Assessment Center
- Nuclear Emergency Search Team
- Radiological Assistance Program

- Radiation Emergency Assistance Center/Training Site

The LLNL ED initiates the request for support of NNSA/LSO assets depending upon the nature and severity of the event. These requests are approved by NNSA/DOE-HQ via NNSA/LSO.

Depending on the severity of an event at LLNL, NNSA/DOE-HQ may activate their EOC. A technical support center, located in the DOE Germantown facility, Germantown, Maryland, can support the NNSA/DOE-HQ EOC. Both of these facilities can communicate via telephone, the Emergency Communications Network, facsimile, and video conferencing.

The twenty-four-hour notification point is the NNSA/DOE-HQ watch room. It is staffed twenty-four hours a day and is collocated with the NNSA/DOE-HQ EOC. During an Operational Emergency, LLNL makes initial notifications to NNSA/DOE-HQ. Subsequent notifications and communications are made to HQ from the ECC, located at the Livermore site.

3.2 Other Federal Agencies

The FBI maintains primary jurisdiction under the Atomic Energy Act for incidents involving the protection of special nuclear material and any crime involving Federal property. In an emergency situation involving security incidents, the FBI will be notified (as required) by the Safeguards & Security Department and may be provided workspace in the EOC or the Tactical Operations Center.

An MOU exists between the FBI, San Francisco Office, NNSA/LSO, and the Safeguards & Security Department, which encompasses emergency response and law enforcement (see Attachment D).

The FBI has the authority to assume command from the LLNL ED during a situation involving a security threat. Under these circumstances, the ED is responsible for ensuring that the LLNL ERO implements any FBI orders. The LLNL Fire IC retains non-security command and control at the scene.

3.3 State Government

The State of California will be notified when an Operational Emergency is declared at LLNL. The State has resources and personnel to assist LLNL during a major emergency that involves the release of hazardous or radioactive materials to offsite locations. The Alameda County Office of Emergency Services takes the lead for offsite response. In that lead role, they would coordinate with the State for assistance and resources.

The State of California's emergency assistance is based on a statewide mutual aid system designed to ensure that additional resources are provided to and among local jurisdictions whenever their own resources are committed or inadequate. The basis for this system is the California Disaster and Civil Defense Master Mutual Aid Agreement. This agreement was developed in 1950 and adopted by California's incorporated cities and fifty-eight counties. It creates a formal structure coordinated by the State within which each local jurisdiction retains control of its own personnel and facilities but can give and receive assistance whenever it is

needed. State agencies are obligated to provide available resources to assist local jurisdictions in emergencies at the direction of the Governor's Office of Emergency Services (OES).

The State of California instituted the Standardized Emergency Management System on December 1, 1996. It is the system used for coordinating State and local emergency response in California. Under the Standardized Emergency Management System, the State's assistance is accessed by requesting resources through the operational area coordinator and the Alameda County sheriff's OES. Fire and mutual aid resources are requested through the local and State mutual aid system.

The California governor's OES is the lead State agency in any response to assist Alameda County and is responsible for making statewide resources available.

The California State Department of Health Services provides trained personnel to assist with monitoring and decontaminating personnel, evaluating the extent of any contamination, and monitoring offsite ingestion pathways.

3.3.1 Governor's Office of Emergency Services

LLNL has several MOUs with the Governor's OES. These MOUs include an agreement for California disaster and civil defense, an agreement for temporary transfer of vehicular equipment, and an agreement for use of radio equipment. Attachment D gives additional information on these MOUs.

Coordinators designated by State agencies assist California's emergency management staff headed by the director of OES or a designated representative. OES is the lead State agency for all aspects of emergency management, including planning, response coordination, recovery coordination, mitigation efforts, and training.

Emergency responsibilities of OES include:

- Development of the State emergency plan
- Receiving and disseminating emergency alerts and warnings
- Coordinating emergency response and recovery activities with the Federal Regional Operation Center and the Joint Information Center
- Processing and acting on mutual-aid requests
- During emergencies, activating and operating the State operations center and regional emergency operations centers and participate in the disaster field office activities
- In coordination with the Federal government, directing and coordinating recovery programs to mitigate future disaster

When the State operations center and regional occupation operations centers are activated the following actions will be taken to support the situation:

- Establish and maintain communications with other EOCs and department operations centers
- Deploy field representatives as needed to assess the situation
- Coordinate and deploy immediate assistance, as requested, through mutual aid

- Establish/confirm air and ground routes into affected areas
- Determine the need for staging areas, mobilization centers, and disaster support areas, and coordinate their establishment
- Provide/deploy technical assistance to supported elements as needed
- Mobilize and stage key resources to address the potential threat
- Monitor and prioritize scarce resources as the situation dictates

Other State agency responsibilities are to provide mutual aid to local jurisdictions appropriate to the emergency situation (*State of California Emergency Plan*, *May 1998).*

3.3.2 California Highway Patrol

Upon request, the California Highway Patrol supports the Safeguards & Security Department by responding with personnel and equipment, including helicopter support, when warranted. The California Highway Patrol, in responding to an emergency request for assistance to LLNL, will render support to the Safeguards & Security Department by maintaining traffic supervision and control over roadways to LLNL operating under a Joint Incident Command System. The nature of the Emergency Response Agreement between LLNL and the California Highway Patrol includes assistance calls and assistance requests under the State Region II Mutual Aid Law Enforcement Plan.

3.4 Local Organizations

3.4.1 Alameda County Sheriff's Office of Emergency Services

The Alameda Country Sheriff's OES is the lead offsite response coordination agency for major emergency and disaster situations at or affecting the Livermore site. The fire chief at LLNL is the point of contact for those requests for resources for mutual-aid systems, such as fire or law enforcement mutual aid.

If the emergency situation requires that the general public be warned, the emergency public information is issued by the cognizant local agency, such as, the City of Livermore or Tracy, County of Alameda or San Joaquin, depending upon the area impacted by the incident.

3.4.2 Alameda County Sheriff's Department

Upon request, the Alameda County Sheriff's Department responds with personnel and equipment, including a special response unit when warranted, to support the Safeguards & Security Department. Support activities are coordinated by the Safeguards & Security Department representative in the Tactical Operations Center and may include assistance in responding to security threats and assistance in evacuating the site. The emergency response agreement between the Alameda County Sheriff's Department and LLNL covers assistance calls and assistance requests under the State *Region II Mutual Aid Law Enforcement Plan*.

3.4.3 San Joaquin County Office of Emergency Services

San Joaquin County Office of Emergency Services serves in the same capacity as Alameda County OES for Site 300.

3.4.4 San Joaquin County Sheriff's Department

Upon request, the San Joaquin County Sheriff's Department responds with personnel and equipment to support a LLNL Site 300 emergency or an immediate officer rescue or backup. The emergency response agreement between the San Joaquin County Sheriff's Department, LLNL, and Site 300 managers covers assistance calls and assistance requests under the State *Region II Mutual Aid Law Enforcement Plan.*

3.4.5 Twin Valley Agreement for Mutual Fire Assistance

In addition to the State of California master mutual aid agreement for fire services and the Alameda County *Fire Mutual Aid Response Plan*, LLNL is a signatory to the Twin Valley agreement for mutual fire assistance. This agreement confirms that, upon request, the associated fire services will respond with personnel and equipment to support LLNL emergencies. These agencies, in responding to an emergency request for assistance, render support to the Livermore/Pleasanton Fire Department.

3.4.6 Livermore-Pleasanton Fire Department

The Livermore-Pleasanton Fire Department is responsible for coordinating disaster planning and emergency response activities for the City of Livermore. The Livermore-Pleasanton Fire Department coordinates its activities with the Alameda County OES, the primary offsite agency for emergencies involving radioactive material. The Livermore-Pleasanton Fire Department assists other responding agencies in locating and providing needed equipment and resources and in updating city officials. In addition, if the primary communication links become unavailable, the Livermore-Pleasanton Fire Department assists in the activation of the amateur radio emergency services (ARES) network.

3.4.7 Livermore Police Department

The Livermore Police Department may be requested to support a LLNL emergency or an immediate officer rescue or backup. In responding to an emergency request for assistance, they render support to the Safeguards & Security Department by responding to security threats, controlling traffic, controlling facility access and assisting with evacuation of the site. The Safeguards & Security Department representative in the Tactical Operations Center or designee coordinates support activities. The law enforcement assistance agreement between Livermore Police Department and LLNL covers assistance calls and assistance requests under the State *Region II Mutual Aid Law Enforcement Plan*.

3.4.8 Tracy Fire Department

The Tracy Fire Department is responsible for coordinating disaster planning and emergency response activities for the City of Tracy. The Tracy Fire Department coordinates its activities

with the San Joaquin County OES, the primary offsite agency for emergencies involving radioactive material in San Joaquin County.

3.4.9 Offsite Medical Facilities

MOUs are in place with ValleyCare Medical Center and Eden Medical Center to provide medical support and to assist the LLNL Health Services Facility, if needed. These facilities have the capability to assist in the treatment of contaminated or contaminated/ injured victims resulting from a hazardous material release at LLNL (see Section 8 of the EPlan).

3.4.10 Valley Emergency Preparedness Working Group

The VEPWG has been reorganized to facilitate the sharing of emergency preparedness and planning information between the Laboratory and those offsite agencies and entities responsible for emergency response and protection of the public and the environment, with whom the Laboratory may interact during emergency situations.

The mission of the VEPWG is to share information and discuss common solutions to challenges in planning for response to scenarios resulting from, or potentially impacting, DOE/NNSA operations at LLNL, including Site 300, located on the Alameda/San Joaquin County line. To accomplish its mission the VEPWG will:

- Promote effective emergency preparedness and response practices through information exchange and mutual cooperation
- Provide a forum to discuss hazards, potential emergency consequences, notification methods, protective actions, coordinated release of emergency information to the public, and the development of coordinated response strategies.
- Provide a basis for better understanding between its community neighbors and the Laboratory regarding emergency preparedness and response activities."

The VEPWG meets quarterly and is chaired by the Alameda County OES. Members include representatives from LLNL and various State, county, and regional agencies

3.5 Tribal Organizations

There are no tribal organizations with emergency response or regulatory control responsibilities relevant to LLNL.

3.6 Private Organizations

There are no private organizations with emergency response or regulatory control responsibilities relevant to LLNL.

3.7 Memoranda of Understanding

The Emergency Management Division maintains MOUs and MOAs with the State of California, OES, the California Department of Forestry, the U.S. Department of Agriculture Forest Service, and other State entities, as well as a number of counties and cities to provide and receive fire fighting assistance, emergency medical service, hazardous material response, emergency dispatch, emergency notification, water service, temporary vehicular transfer, and radio equipment. These agreements are maintained as part of the Laboratory's commitment to community partnerships and to the State of California Standardized Emergency Management System.

The Safeguards & Security Department maintains MOUs with the FBI, the California Highway Patrol, Alameda and San Joaquin County Sheriff's Departments, and the City of Livermore Police Department to provide and receive law enforcement assistance. Assistance from the FBI comes under their jurisdiction for events involving special nuclear material, threats or uses of weapons of mass destruction and crimes on Federal property. State, county, and City of Livermore assistance is accomplished per the provisions of the *State Mutual Aid Law Enforcement Plan.*

The Hazard Control Department maintains MOUs with the Eden Hospital Medical Center and the ValleyCare Medical Center for providing and receiving assistance in the treatment of radiologically contaminated persons in need of additional medical care.

Attachment D lists a summary of the MOUs, the parties responsible for update or renewal, the last update, the expiration date, if applicable, and the location of the document.

4 EMERGENCY CATEGORIZATION AND CLASSIFICATION

This section provides an overview of the process used for categorization and classification of Operational Emergencies. Specific actions and criteria for categorization and classification of Operational Emergencies are described in EPIP-41, *Emergency Categorization and Classification*.

Operational Emergencies at LLNL are unplanned, significant events or conditions representing a potential or actual degradation in the level of safety that may require time-urgent response from outside the immediate affected site, facility, or area of the incident. Such emergencies are caused by, involve, or affect LLNL facilities or activities and may involve degradation of personnel health and safety, the environment, security and safeguards, or the release or loss of control of hazardous materials.

4.1 Definitions

4.1.1 Operational Emergency Categories

An Operational Emergency may be *categorized* according to the following designations:

- Health and safety Operational Emergency
- Environmental Operational Emergency
- Security and safeguards Operational Emergency
- Hazardous materials Operational Emergency
- Offsite emergency affecting LLNL
- Fire, emergency medical services, mass casualty, or other emergency at the discretion of the Duty Chief

Of these categories, only hazardous materials Operational Emergencies are further classified as an Alert, Site Area Emergency, or General Emergency. However, security and safeguards Operational Emergencies may be further classified based on the potential for a release of hazardous materials and the projected consequences. Additional detail may be found in EPIP-41, *Emergency Categorization and Classification*.

4.1.2 Operational Emergency Classifications

Hazardous materials Operational Emergencies may be classified in order of increasing severity.

4.1.2.1 Alert

An Alert shall be declared when events are predicted, are in progress, or have occurred that result in one or more of the following:

- An actual or potential substantial degradation in the level of control over hazardous materials (radiological and non-radiological) such that the radiation dose from any release of radioactive material or concentration in air from any release of other hazardous material is expected to exceed the applicable protective action guide (PAG) value beyond 30 meters but not greater than the facility boundary (100 meters).
- An actual or potential substantial degradation in the level of safety of a facility or process that could, with further degradation, produce a Site Area Emergency or General Emergency.

4.1.2.2 Site Area Emergency

A Site Area Emergency shall be declared when events are predicted, in progress, or have occurred that result in one or more of the following situations:

- An actual or potential major failure of functions necessary for the protection of workers or the public. The radiation dose from any release of radioactive material or concentration in air from any release of other hazardous material is expected to exceed the applicable PAG or emergency response planning guideline (ERPG) values beyond the facility boundary or exclusion zone boundary. The PAG or ERPG value is not expected to be exceeded at or beyond the site boundary.
- Actual or potential major degradation in the level of safety or security of a facility or process that could, with further degradation produce a General Emergency.

4.1.2.3 General Emergency

A General Emergency shall be declared when events are predicted, in progress, or have occurred that result in one or more of the following situations:

- Actual or imminent catastrophic reduction of facility safety or security systems with potential for the release of large quantities of hazardous materials (radiological or non-radiological) to the environment.
- The radiation dose from any release of radioactive material or concentration in air from any release of other hazardous material is expected to exceed the applicable PAG or ERPG value at or beyond the site boundary.

A description of the PAG and ERPG criteria is provided in Section 7 of this EPlan and in EPIP-71, *Emergency Protective Actions and Reentry*. Operational Emergencies are reported to LEDOs, DOE and offsite agencies. See EPIP-51, *Emergency Notifications*.

4.2 Criteria for Operational Emergencies Not Requiring Further Classification

In some cases, an event may occur that, while it does not meet the criteria for a classifiable Operational Emergency, does pose a concern for personnel health and safety, environmental impact, or security. In general, an Operational Emergency Not Requiring Further Classification is defined as a health and safety, environmental, safeguards and security, or offsite transportation event that does not meet the criteria for an Alert as described above. The following table

provides examples of potential indicators for Operational Emergencies Not Requiring Further Classification.

Table 4.1 Potential Indicators for Operational Emergencies Not Requiring Further Classifications

Operational Emergency Category	Indicator(s)
Health and Safety	Discovery of radioactive or other hazardous material contamination from past NNSA operations that is causing or may reasonably be expected to cause uncontrolled personnel exposures exceeding protective action criteria. An offsite hazardous material event not associated with LLNL operations that is observed to have or is predicted to have an impact on an LLNL site such that protective actions are required for onsite LLNL workers. An occurrence that causes or can reasonably be expected to cause significant structural damage to LLNL facilities, with confirmed or suspected personnel injury or death or substantial degradation of health and safety. Any facility evacuation in response to an actual occurrence that requires time-urgent response by specialist personnel, such as hazardous material responders or mutual aid groups not normally assigned to the affected facility. An unplanned nuclear criticality resulting in actual or potential facility damage and/or release of radioactive material to the environment. Any non-transportation-related mass casualty event.
Environment	Any actual or potential release of hazardous material or regulated pollutant to the environment, in a quantity greater than five times the reportable quantity specified for such material in 40 C.F.R. 302, that could result in significant offsite consequences such as major wildlife kills, wetland degradation, aquifer contamination, or the need to secure downstream water supply intakes. Any release of greater than 1000 gallons (24 barrels) of oil to inland waters, greater than 10,000 gallons (238 barrels) of oil to coastal waters, or a quantity of oil that could result in significant offsite consequences (for example, need to relocate people, major wildlife kills, wetland degradation, aquifer contamination, and need to secure downstream water supply intakes). Oil, as defined by the Clean Water Act [33 U.S.C. 1321], means any kind of oil and includes petroleum.

Operational Emergency Category	Indicator(s)
Security and Safeguards	Actual unplanned detonation of an explosive device or a credible threatened detonation resulting from the location of a confirmed or suspicious explosive device. An actual terrorist attack or sabotage event involving an LLNL site/facility or operation. Kidnapping or the taking of hostage(s) involving an LLNL site/facility or operation. Actual theft or loss of a Category I or II quantity of special nuclear material or other hazardous material that, if released, could endanger workers, the public, or the environment. Damage or destruction of a site or facility by natural or malevolent means sufficient to expose classified information to unauthorized disclosure.
Offsite Transportation Activities	The radiation dose from any release of radioactive material or the concentration in air from any release of other hazardous material is expected to require establishment of an initial protective action zone. ("Protective action zone" is defined in the Emergency Response Guidebook). Failures in safety systems threaten the integrity of a nuclear weapon, component, or test device. A transportation accident that results in damage to a nuclear explosive, nuclear explosive-like assembly, or Category I/II quantity of special nuclear material.

4.3 Emergency Action Levels

Upon arrival at an incident scene, the Duty Chief determines whether or not the incident is an Operational Emergency based on the general criteria above and guidance provided in EPIP-41, *Emergency Categorization and Classification*. If a release or potential release of radiological or non-radiological hazardous material poses a threat to workers and/or the public, the Duty Chief may declare an Alert, Site Area Emergency, or General Emergency based on severity. The classification will be declared by the Duty Chief using the applicable emergency action levels (EALs), which provide guidance to classify a hazardous material Operational Emergency under conditions of limited real-time availability of event-specific data.

EALs are specific, pre-determined, observable criteria used by the Duty Chief to detect, recognize and classify an Operational Emergency. For each facility for which an Alert, Site Area Emergency or General Emergency could occur, the EALs describe on-scene indicators and list

the distance to the nearest site boundary and describe the conditions and indicators upon which the classification is based, including the maximum distances at which the PAG or ERPG values would be observed. EALs are developed for potential classifiable Operational Emergencies, including radiological and non-radiological releases, terrorism and sabotage ("malevolent acts"), fires, explosions and natural phenomena. Locations of controlled copies of the EAL books may be found in Emergency Preparedness Section files.

EALs are developed from scenario input data and results provided in the facility EPHAs. This information provided in the EALs for identified accidents or emergency event scenarios corresponds to the initiating conditions, accident mechanisms, equipment or system failures, event indicators, and contributing events. The EPHAs also provide a quantitative estimate of the consequences of each release at specific receptor locations, such as the facility boundary, site boundary, and the maximum distance at which the PAG or ERPG is exceeded. This last estimate allows determination of the emergency class associated with the release.

EALs may be either symptom-based or event-based. The difference between the two arises from the available methods of detection and recognition of event-initiating conditions. Symptom-based EALs are dependent on one or more observable conditions, while event-based EALs are based on the occurrence of specific events with potential safety significance.

For event-based EALs, the level of severity is based on the degree to which the event is expected to degrade the safety of hazardous materials. Safety degradation may result from impacts on control systems, confinement barriers, or the ability of personnel to mitigate the situation.

For LLNL, most EAL sets contain event-based EALs. To compensate for limited information or unforeseen conditions, EALs in use at LLNL also allow for discretionary implementation by the responsible Duty Chief.

Additional detail regarding EAL development and use may be found in EPIP-61, *Emergency Preparedness Hazards Survey and Hazards Assessment* and EPIP-41, *Emergency Categorization and Classification*.

Appropriate protective actions are implemented for onsite personnel by the IC and recommended for offsite populations by the Duty Chief or ED. Actions and criteria for determining and implementing protective actions can be found in EPIP-71, *Emergency Protective Actions and Reentry*.

Under unified command, declaration of an Operational Emergency may be warranted based on law enforcement or safeguards concerns not involving or potentially involving hazardous materials. In this case, the Duty Chief declares the Operational Emergency and determines the classification based on a description of the situation provided by the on-scene Safeguards & Security watch commander. Further classification of a security Operational Emergency as an Alert, Site Area Emergency, or General Emergency is based on the potential for a release of hazardous materials and the projected consequences. If the event does not involve hazardous materials or if the projected consequences do not meet the criteria for a classifiable Operational Emergency, the event is declared an Operational Emergency Not Requiring Further Classification. The Protective Force Division procedures describe notification of the Safeguards

& Security Department management and the Duty Chief. These notification guidelines are provided for in the Protective Force Divisions emergency contingency plans.

Depending upon the event, the security watch commander may also recommend implementation of a security condition level commensurate with the threat posed to LLNL by the event. Actions and criteria for implementing a security condition level are described in the Protective Force Division's emergency contingency plans.

Upon declaration of a classifiable Operational Emergency, the Duty Chief and/or LEDO will activate the ERO per established procedures. The staffing required for an Operational Emergency or an Alert is determined by the LEDO and may consist of personnel from the field response organization, EOC, OSCs, and JIC. For an emergency event classified as a Site Area Emergency, the ERO and all emergency response facilities (with the exception of the JIC) are automatically activated by the Duty Chief. For an emergency event classified as a General Emergency, the ERO and all emergency response facilities are automatically activated by the Duty Chief. Specific actions and criteria for activation and operation of the EOC, including minimum required staffing, can be found in EPIP-111, *Activation and Operation of the Emergency Operations Center*.

5 EMERGENCY NOTIFICATIONS AND COMMUNICATIONS

Protocols are in place for the prompt initial notification of Laboratory emergency response personnel, onsite personnel, and emergency response personnel/organizations offsite including NNSA/LSO, NNSA/DOE-HQ, and other Federal, State, and local organizations. Communication systems are also in place to provide for continuing effective communication among the EROs, both offsite and onsite, throughout an Operational Emergency.

5.1 Notifications

5.1.1 Onsite/Offsite Notifications

When a potential Operational Emergency, not involving hazardous materials occurs, the Fire IC or security watch commander is responsible for notifying emergency response personnel and potentially impacted onsite personnel of initial protective actions, and providing the LLNL Fire Department Duty Chief with a briefing. The Duty Chief may declare an Operational Emergency and initiate notifications, including appropriate offsite authorities and the LEDO per EPIP-51, *Emergency Notifications*.

If the Operational Emergency involves or has the potential to involve hazardous materials, the Duty Chief may further classify the event as an Alert, Site Area Emergency, or General Emergency, brief the LEDO, call-out the ERO, and initiate offsite agency notifications. The LEDO notifies the director's office and other applicable senior LLNL and University of California Office of the President management.

If a Site Area Emergency or General Emergency has been declared the entire ERO and all supporting emergency response facilities with the exception of the JIC (at Site Area Emergency), will be automatically activated. If an Operational Emergency Not Requiring Further Classification or Alert has been declared, the level of activation will be determined by the ED/LEDO. The ERO will be called out via the Communicator, a PC-based, digital system that activates both telephones and pagers. A manual call-out back-up system, utilizing Fire Dispatch and/or the occurrence reporting duty officer is also available. The Duty Chief, acting as the ED has the responsibility for offsite notifications until the EOC has been declared "operational" and the on-duty LEDO has assumed the role of ED and accepts responsibility for all subsequent notifications.

5.1.2 Offsite Agency Notification

The offsite agencies in the following listing will be notified within fifteen minutes of the declaration of an Operational Emergency involving hazardous materials (Alert, Site Area

Emergency, or General Emergency). In an Operational Emergency, not involving hazardous materials, offsite agency notifications will be accomplished within thirty minutes.

Offsite notifications are made to:

- NNSA/LSO duty officer
- City of Livermore Police Department
- Livermore/Pleasanton Fire Department
- Alameda County OES
- San Joaquin County OES
- State of California Office of Emergency Services Warning Center
- Sandia Laboratory (Livermore)
- NNSA/DOE-HQ EOC duty officer
- Tracy Fire Department
- Tracy Police Department

Follow-up notifications will be provided on an hourly basis (from the previous notification), or whenever the classification of the emergency event changes, protective action recommendations are revised, or the emergency has been terminated.

Each of the agencies listed above has provided primary and back-up numbers to be called for initial notifications, in addition to facsimile numbers to receive follow-up hard copy. These numbers are reviewed and verified on a quarterly basis. To ensure consistency of the information provided, all notifications are made using the "LLNL Offsite Emergency Notification Form," Appendix B of EPIP-51 *Emergency Notifications.*

Initial notifications are made by the Duty Chief using the Communicator. Typically, the Duty Chief will fill out the notification form, then transmit the information into the Communicator, which sends the information simultaneously to all offsite agencies. If the Communicator malfunctions, the Duty Chief can verbally provide the notification information to Fire Dispatch and it can be manually transmitted to designated agencies.

After the EOC has been declared "operational," the ED assumes responsibility for subsequent notifications. The EOC Coordinator will oversee the notification process within the EOC and ensures further notifications and/or updates are completed in accordance with EPIP-51 *Emergency Notifications*.

When notified of an emergency at LLNL the Alameda County Sheriff's OES notifies other appropriate State of California entities. The Alameda County OES also coordinates and authorizes use of the State of California's emergency broadcast system.

5.1.3 Department of Energy Assets

When there is a need of existing DOE assets to support the emergency response the ED or response manager will make a request through the NNSA/LSO EMT member or duty officer.

5.1.4 National Nuclear Security Administration Field and Headquarter Notifications

Upon categorization of an Operational Emergency and/or declaration of a classified emergency, the NNSA/LSO duty officer and the DOE-HQ EOC duty officer are notified, via the "Communicator," as a part of the official offsite notification process. The NNSA/LSO duty officer and NNSA/DOE-HQ will continue to receive subsequent notifications and updates throughout the emergency.

5.2 Communications

Reliable and redundant communications systems provide LLNL the means to notify Federal, State, and local response agencies and provide direction and control of the ERO.

5.2.1 Secure Communications

The LLNL EOC and ECC have the capability for secure communications using a secure telephone unit and secure facsimile for connectivity to NNSA/DOE-HQ EOC. In addition, a secure communication and teleconferencing system is available through R-Division. The ECC also has secure video-conferencing capability.

5.2.2 Communications with Offsite Agencies

The primary communications system for official offsite notifications is the Communicator. This is a PC-based digital communications system, located in the Fire Dispatch Center. If the Communicator fails, Fire Dispatch has the availability of other independent telephone systems to allow for completion of notifications. In addition, LLNL has the ARES available for emergency communications.

The Communicator is also utilized for call-out of LLNL ERO personnel via pager and/or telephone.

5.2.3 Other LLNL Communications Systems

Communications requirements fall into three general categories:

- Emergency instructions to onsite workers
- Initial notifications of EROs
- Operational communications between command centers and field response elements

The dedicated evacuation voice/alarm system is the primary communications tool used to notify Laboratory workers of expected protective actions and additional general information. Site 300 notifications are through the administrative building page system.

Other communications systems include the LLNL telephone system, a building paging system, LLNL radio station, a digital paging system, emergency vehicle public address system, 400MHz ARES, and the WebEOC computer communications system.

The LLNL trunking radio system through the Fire Dispatch Center provides primary communications among emergency responders and from the incident scene to the IC and the Duty Chief. The EOC has the capability of monitoring these radio communications.

When the emergency response facilities are operational, communications between the EOC and the OSCs, including the JIC will be made primarily via the WebEOC system. This computer-based system allows participants to review information in real time. The Laboratory telephone system and ARES may be used as backup communications tools for intra-facility communications.

Each communications system or network is maintained in a state of readiness through regularly scheduled operational tests. These tests and their periodicity, as well as communications issues identified during tests, drills and exercise are documented in after action reports and tracked to resolution, as discussed in EPIP- 141, *Emergency Preparedness Program Administration.*

6 CONSEQUENCE ASSESSMENT

Consequence assessment is the process used to evaluate the impacts of a release of radioactive or other hazardous materials. Consequence assessment at LLNL is an ongoing process that begins with recognizing that an incident has occurred, continues through various phases of response to the incident, and concludes with cleanup and remediation. As such, the process includes performing timely initial assessments necessary to support initial decisions and the continuous process of refining those initial assessments as more information and resources become available.

6.1 Consequence Determination

Consequence assessment is conducted in three phases during the response to a hazardous material incident:

- Upon recognition of the emergency, tabulated results of planning consequence calculations from the appropriate EPHAs, and related EALs are used to make an initial estimate of the consequences. These documents are described in EPIP-61, *Emergency Preparedness Hazards Survey and Hazards Assessment*, and the EPlan Section 4**.**
- The timely initial assessment is performed in the first few minutes of response when requested by the LEDO/ED. The consequence assessment team verifies the consistency of the EAL-based consequences by reconstructing the modeling of the EAL-based scenario. The model is then run again, using available real-time event and meteorological information to project event-specific plume consequences.
- The Continuous Assessment phase begins with the timely initial assessment and continues throughout the response and mitigation. Modeling performed in this phase is supplemented by data gathered by the Field Monitoring Teams deployed by the Hazard Control Department and the OSC. This will ensure that, as the event unfolds, changes in variables associated with consequence assessment are addressed and updated.

6.1.1 Initial Consequence Assessment

When there is an incident or the imminent potential for an incident that might release significant quantities of radioactive materials or toxic chemicals, the Duty Chief, with guidance from the EALs in the *Duty Chief's Notebook*, makes a preliminary consequence assessment. The EALs provide input for event detection, recognition, categorization and classification. Based on the assessment the Duty Chief will:

- Initiate protective actions, if warranted, for emergency responders and affected onsite facilities and personnel. Recommend offsite protective actions, if appropriate

- Ensure appropriate on-scene evaluations and recommendations are communicated to the LEDO/ED
- Confer with the LEDO/ED on emergency classification and the need for offsite notification

The initial assessment of the IC may be augmented by the consequence assessment team based on EAL data evaluation from predefined incident scenarios for the facility and/or operation described in the associated EPHA.

6.1.2 Timely Initial Assessment

Within about the first thirty minutes of the response, assessments should be performed leading to an estimate of the upper bound of the potential consequences of the release. If this assessment is completed in a timely manner, it may provide additional data for determining the appropriate classification of the Operational Emergency. To aid in the timeliness of information, the results should be based upon pre-calculated results and upon simplified calculation methods including computer codes and calculated values. These actions may be initiated by first response personnel, and may be augmented with the continuous assessment process once the consequence assessment team and ERO staffs are available.

6.1.3 Continuous Assessment

Continuous consequence assessment consists of re-evaluation as additional information is gathered and emergency conditions become better defined. This process is ongoing through recovery and return to normal operations, in accordance with EPIP-71, *Emergency Protective Actions and Reentry*, and EPIP-91, *Emergency Termination and Recovery*. This process ensures that the data is available for decision-makers to ensure that appropriate protective actions are maintained and adjusted as needed. The mitigative or ameliorative progress is monitored and communicated to the affected parties. This process is similar to the timely initial assessment process, but is cyclical, with increasing levels of sophistication in the analysis tools, input accuracy, technical expertise, and feedback from field monitoring efforts. Consequence assessment during recovery and planning for the return to normal operations includes continued environmental sampling to verify the effectiveness of restoration activities. Consequence assessment is also performed to minimize the further spread of hazardous materials. Final measurements demonstrate that consequences from the hazardous materials release are reduced to acceptable levels, or specific areas isolated, at the conclusion of recovery.

6.2 Coordination

The ED is responsible for coordinating with Federal, State, and local organizations to ensure accurate and timely consequence assessments, determinations, and coordinated responses. This coordination is outlined in EPIP-111, *Activation and Operation of the Emergency Operations Center*. The EOC, supported by the OSCs, can provide the expertise to locate and track hazardous materials; estimate the integrated impact of hazardous materials released onsite, offsite and into the environment; and locate and recover materials, especially those with national security implications.

6.3 Emergency Preparedness Hazards Assessments

As an integral part of emergency preparedness, hazards surveys and assessments are performed and updated as needed. See EPIP-141, *Emergency Preparedness Program Administration* for a discussion of EPHA updates. See EPIP-61 *Emergency Preparedness Hazards Survey and Hazards Assessment* for a discussion of the requirements, processes, and procedures used to perform and document the Emergency Preparedness Section hazards survey and the facility EPHAs that form the technical bases for the LLNL emergency management program.

7 PROTECTIVE ACTIONS AND REENTRY

This section provides an overview of the protective action process, including criteria for protective actions, determining pre-planned protective actions, implementing and/or recommending protective actions during an emergency and a discussion of the reentry process.

The process begins with development of pre-planned protective actions based on the results from the EPHA, followed by identification of notification requirements, development of plans and procedures for protective actions, and identification of personnel who will be responsible for determining, recommending and implementing protective actions. Specific actions and criteria for developing EPHAs can be found in EPIP-61, *Emergency Preparedness Hazards Survey and Hazards Assessment*. Notification requirements and actions are found in EPIP-51, *Emergency Notifications*. Actions and criteria for determining and implementing protective actions can be found in EPIP-71, *Emergency Protective Actions and Reentry*.

The Laboratory has procedural actions for protection of onsite personnel and recommendations to offsite agencies in the event of an Operational Emergency. Protective action criteria are levels of hazardous material that, if observed or predicted, indicate action is needed to prevent or limit exposure to the hazard.

The IC will direct protective actions for affected onsite personnel based on the initial size-up. If initial projections indicate that a hazardous material plume may extend beyond the site boundary or that protective action criteria may be exceeded offsite, the LLNL Fire Department Duty Chief/ED will make protective action recommendations to offsite agencies through procedure EPIP-51, *Emergency Notifications*.

- Stand by for further information from LLNL
- Shelter the public in suggested areas per local jurisdictional procedures
- Evacuate the public in suggested areas per local jurisdictional procedures

Protective actions for the public may be ordered only by public officials or their designees, the Duty Chief/ED will make recommendations only.

7.1 Protective Action Criteria

7.1.1 Protective Action Guides (Radiological)

The protective action criteria for radiological materials are contained in the Environmental Protection Agency's (EPA) *Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*, EPA 400-R-92-001 (May 1992). The PAG is the value that is used to classify Operational Emergencies and to initiate appropriate protective actions. Implementation of these protective actions is described in EPIP-71, *Emergency Protective Actions and Reentry.*

The PAG is defined in EPA 400-R-92-001 as the projected 50-year total effective dose equivalent from exposure and intake during the early phase of the event. The total effective dose equivalent is calculated as the sum of the effective dose equivalent from external source exposure and the committed effective dose equivalent from inhalation during the early phase of the event. Consistent with Table 2-1 of EPA 400-R-92-001, a PAG of one to five rem is typically assumed. At LLNL, the lowest value, one rem, is used for doses resulting from direct radiation or the uptake of materials that have a physical or biological half-life that is short compared to fifty years (for example, tritium). Five rem is used for doses resulting from the uptake of long half-life materials (for example, plutonium).

The threshold for early lethality for a radiological release is a projected total effective dose equivalent of 100 rem. The intent is to approximate the dose at which sensitive groups within any large population would begin to show an increase in mortality.

Postulated radiological release scenarios and the PAGs used are described in the EPHAs.

7.1.2 Emergency Response Planning Guidelines (Chemical)

The protective action criteria for chemical materials are listed by the temporary emergency exposure limit (TEEL), published and maintained on the DOE chemical safety website. These values for airborne concentrations of released materials are based on requirements in the Occupational Safety and Health Administration, EPA, and other exposure limits. ERPGs developed by the American Industrial Hygiene Association have been incorporated into the TEEL list, where available. The following three reference values are defined for each material as follows:

- ERPG-1/TEEL-1 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing other than mild transient adverse health effects or perceiving a clearly defined objectionable odor.
- ERPG-2/TEEL-2 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms that could impair their abilities to take protective action.
- ERPG-3/TEEL-3 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing life-threatening health effects. This is considered the threshold for early lethality for chemical releases.

ERPG-2 or TEEL-2 is used for the classification of emergency events and the initiation of protective action.

Postulated chemical release scenarios are also described in the EPHAs.

7.2 Emergency Planning Zones

The emergency planning zones (EPZs) for hazardous material accidents with offsite consequences are described and analyzed in the individual facility EPHA. In general, an EPZ is

an area within which the results of an EPHA indicate the need for specific and detailed planning to protect people from the consequences of hazardous material releases. For LLNL and Site 300, it was determined that a 2-mile composite EPZ was appropriate based upon a summary of the EPZs for individual facilities on site. The development and identification of this composite EPZ may be found in EPIP-61, *Emergency Preparedness Hazards Survey and Hazards Assessment*. Figures 7.1 and 7.2 of this EPlan depict the results of the EPZ development process for the LLNL Livermore site and Site 300, respectively.

The EPZ is characterized by specific criteria, called EALs, which are used to classify a specific response event under conditions of limited real-time availability of event-specific data.

If EALs are exceeded, it is initially the responsibility of the LLNL Fire Department Duty Chief to declare an Alert, Site Area Emergency or General Emergency per EPIP-41, *Emergency Categorization and Classification*, and to implement appropriate protective actions (for example, sheltering versus evacuation) for the affected area per the applicable EALs and EPIP-71, *Emergency Protective Actions and Reentry.* Offsite response agencies are notified of all Operational Emergencies at LLNL, and offsite protective action recommendations are provided by the Duty Chief or ED to offsite agencies when a General Emergency is declared.

LLNL emergency response personnel will notify and coordinate with appropriate offsite emergency response agencies and organizations for sheltering and/or evacuation activities per EPIP-51, *Emergency Notifications*. Mutual-aid agreements, which are maintained in the Fire Department files, permit the Laboratory to assist in offsite protective actions including closing the following public roads leading to the Laboratory:

- East Avenue east of Vasco Road
- Greenville Road between Patterson Pass and Tesla Roads

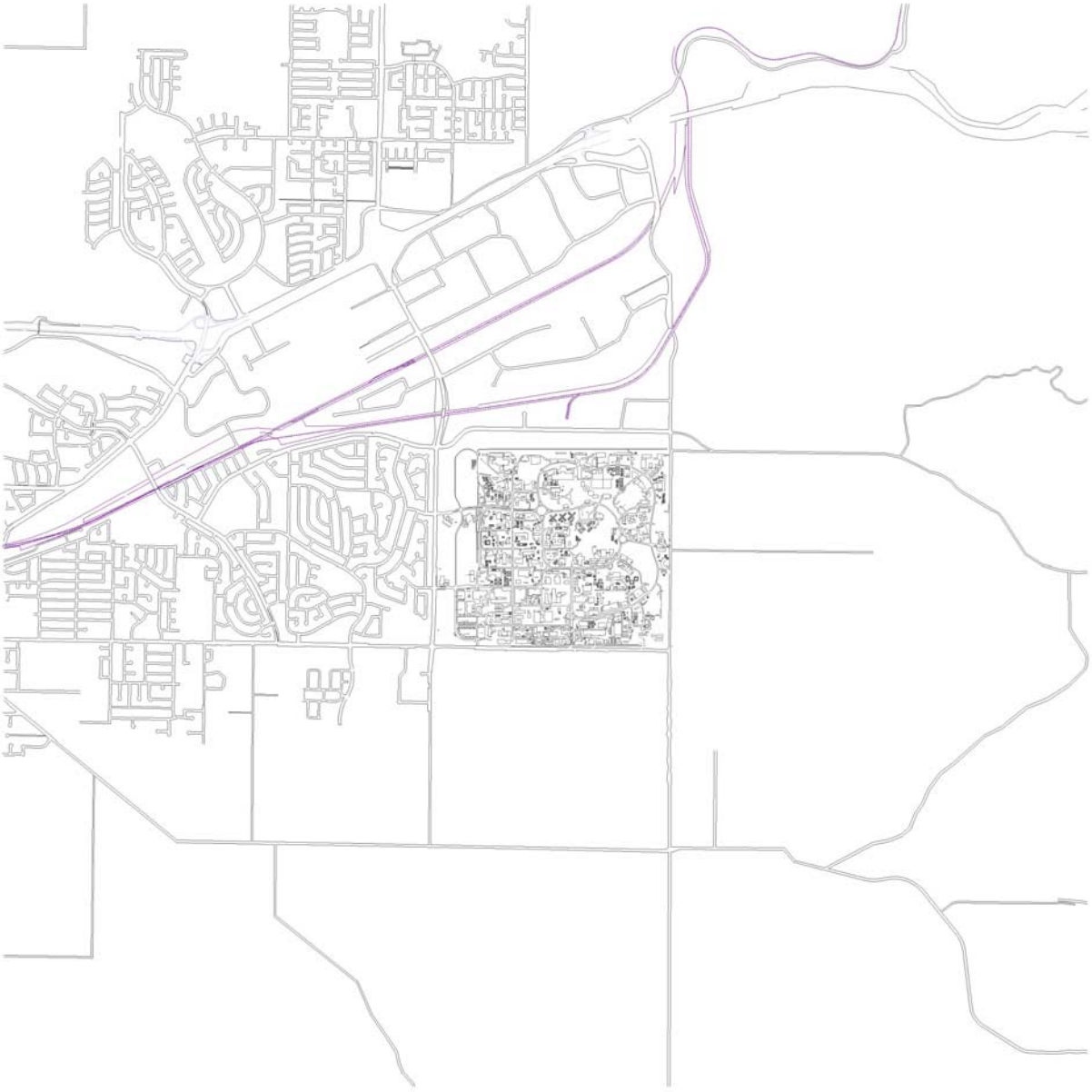

Figure 7.1 LLNL Livermore Site Emergency Planning Zone

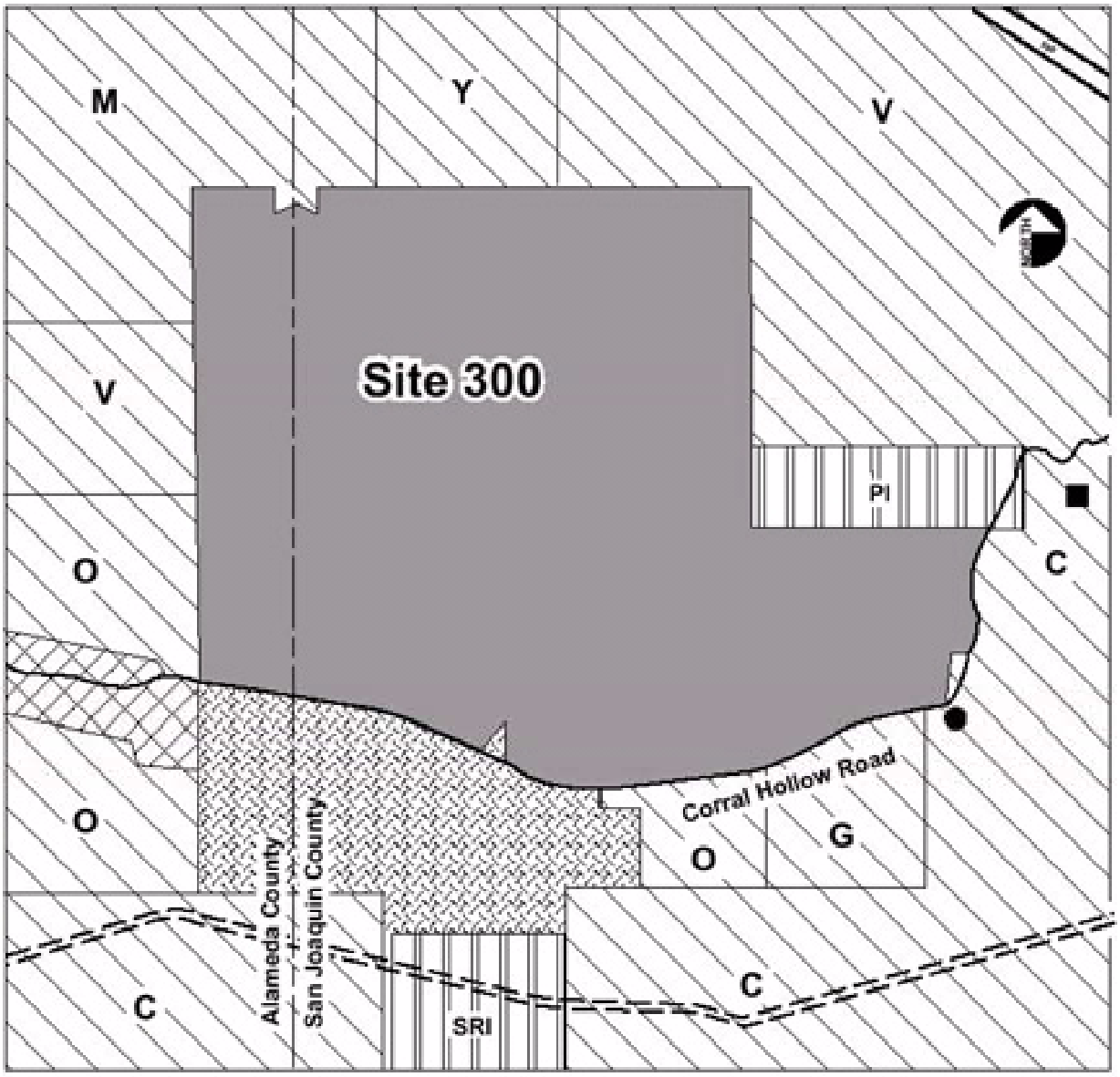

Figure 7.2 LLNL Site 300 Emergency Planning Zone

7.3 Protective Action Implementation

7.3.1 Protective Action Categories

The primary objectives of protective actions are:

- Severe early health effects should be avoided by taking protective actions to limit individual doses or exposures to levels below the threshold for those effects
- The risk to individuals should be limited by taking protective actions which produce a positive net benefit to the individuals involved, such as, the risk to the individual from taking the protective action is lower than the risk from exposure or dose that is thereby avoided
- The overall risk to workers and the public should be limited, to the extent practicable, by reducing the population or collective dose (or exposure)
- Protective actions that, when implemented individually or in combination, accomplish these objectives include, but are not limited to, sheltering and evacuation

Following implementation of initial protective actions and prior to activation of the EOC, the Duty Chief/IC should continuously evaluate the situation to determine if modifications to the initial protective actions are warranted. Following EOC activation, responsibility for ensuring protective actions are adequate is assumed by the ED/response manager. Additional detail may be found in EPIP-71, *Emergency Protective Actions and Reentry.*

7.3.2 Onsite Protective Actions

Evacuation and/or sheltering are likely to be the most effective protective actions that can be taken to minimize risk to workers close to the event scene. Workers closest to the scene of an emergency will be subjected to the highest risk from the effects of the accident conditions with the least warning time. Depending on the particular circumstances of the emergency, either method of protective actions, or a mix of the two, may be implemented to avoid or minimize the exposure of individuals to the hazardous materials released.

Sheltering may be the appropriate protective action when:

- Workers have access to a facility that provides protection
- The dose or exposure will be less than that associated with evacuation
- It places workers in a position where additional instructions can be rapidly disseminated
- Rapid evacuation is impeded
- Plume arrival is imminent

Evacuation may be appropriate when:

- No facility protection is available
- Concentrations may exceed the threshold for early lethality (100 rem or TEEL/ERPG-3)
- Plume arrival is not imminent

Facility-specific evacuation plans and routes are included in the corresponding FSPs and self-help plans. The plans describe how employees are notified of an evacuation and include

diagrams of the evacuation routes and assembly points. Site-wide evacuation will be conducted per existing traffic control protocols. Evacuation of offsite locations, if recommended, will be conducted by the appropriate offsite authorities using their established procedures and protocols.

Subsequent options following shelter or evacuation orders include:

- Personnel decontamination
- Medical care (for example, administration of a chelating agent)
- Ad hoc respiratory protection
- Access control
- Shielding
- Radioprotective prophylaxis (for example, administration of stable iodine)

7.3.3 Offsite Protective Action Recommendations

LLNL protective action recommendations for protection of offsite populations are developed using the same criteria as onsite protective actions. Additional detail regarding protective action recommendations may be found in EPIP-71, *Emergency Protective Actions and Reentry*. Actions and criteria for notification of offsite agencies are described in EPIP-51, *Emergency Notifications*.

7.4 Personnel Accountability/Evacuation

A system of evacuation and accounting for facility personnel is described in the LLNL *ES&H Manual*, facility self-help plans, and in individual FSPs, as applicable. Following an evacuation order, onsite personnel will be accounted for by one of the following systems as described in facility-specific self-help plans:

- **Roll-call system**: A roll-call system records the movement of all personnel to and from a facility or area. The system operates at all times and provides an immediate accounting of occupants in an area. Although this system is preferred, it is feasible in only a few LLNL facilities.
- **Exception system**: In the absence of a roll call, a system of accounting for personnel by the exception method is used. This method is based on the assumption that the only effective count is accomplished by a thorough search, preferably by personnel familiar with the facility or area. The facility self-help plan or FSP should provide general guidance for an organized sweep team that includes how the search is to be conducted and assessment of risk versus benefit of the search. The assembly point leader, in coordination with the designated sweep team leader, is responsible for assessing the risks and development of the search plan as well as the overall effectiveness of this accountability.

7.5 Reentry

Reentry activities may fall into two general categories. The first type generally involves activities necessary to properly account for all personnel and/or rescue activities. The second involves

reentry into the affected area for the purpose of assessing the situation and planning recovery operations.

This section addresses the determination of appropriate actions for the rescue and recovery of persons and the protection of health and property during emergency response. Reentry activities related to recovery planning and event termination are described in Section 9 of the EPlan and in EPIP-91, *Emergency Termination and Recovery*.

10 CFR 835.1302 contains requirements to be met when conducting these operations in response to a radiological hazard. The regulation provides dose guidelines for the control of exposure during specific types of activity. Although the regulation is designed for response to radioactive releases, the basic principles apply to any type of hazardous material response. The regulation begins with three basic principles: "1) The risk of injury to those individuals involved in rescue and recovery operations shall be minimized; 2) Operating management shall weigh actual and potential risks to rescue and recovery individuals against the benefits to be gained; and 3) Rescue action that might involve substantial risk shall be performed by volunteers."

7.5.1 General Considerations

The risk of injury to persons involved in rescue and recovery activities should be minimized, to the extent practical. Control of exposures should be consistent with the immediate objectives of saving human life; recovering deceased victims; and/or protection of health, property, and the environment.

- The ED IC should exercise judgment to evaluate any proposed action involving exposure. Evaluation should consider risk versus benefit, for example, weighing the risks of health impacts, actual or potential, against the benefits, for example, social and economic. The ED/IC should also recognize that accident situations involving the saving of human lives will require different evaluation bases than those required to recover deceased victims or to protect property.
- Before dispatching any reentry teams, the ED/IC should ensure that the activities have been coordinated with the head of the organization providing the reentry team members to ensure that all operational and safety concerns are resolved prior to team dispatch.
- Exposures to radiological or chemical hazards should be minimized, using guidance and criteria that is consistent with that governing hazardous material response for private industry. Guidance, criteria, and technical information concerning response to hazardous materials have been published by a number of organizations and Federal agencies including the Occupational Health and Safety Administration, EPA, the Department of Transportation, the Federal Emergency Management Agency, National Fire Protection Association, American Industrial Hygienist Association, and others.

For emergency situations, 10 CFR 835.1302 contains requirements for emergency exposure during rescue and recovery activities, such as saving of human life, recovery of deceased victims, and protection of health and property.

- Saving of human life or protection of large populations. If the victim is considered to be alive, the course of action should be determined by the individual in charge of the on scene

response activity. The potential amount of exposure to rescue personnel should be evaluated, and an exposure objective should be established for the rescue mission.

- The evaluation of the inherent risks should consider:
    - The reliability of the prediction of injury from measured/estimated exposure rates. In this context, consideration should be given to the uncertainties associated with the specific instruments and techniques used to estimate the exposure rate. This is especially crucial for exposure to radiation when the estimated dose approximates 100 rad or more.
    - The effects of acute external and/or internal exposure.
    - The capability to reduce risk through physical mechanisms such as the use of protective equipment, remote manipulation equipment, or similar means.
    - The progress of any mitigative efforts that would decrease or increase risk.
    - The probability of success of the rescue action.
- Recovery of Deceased Victims. The recovery of deceased victims should be well planned. Except as provided below, the amount of exposure received by persons in recovery operations should be controlled within existing occupational exposure limits.
- When fatalities are located in inaccessible areas due to high risk, and when the recovery mission would result in exposure in excess of occupational exposure limits, special remote recovery devices should be considered for use in retrieving bodies.
- When it is not feasible to recover bodies without personnel entering the area, the official in charge may approve personnel to exceed occupational exposure limits. This approval, for an individual, should not exceed ten rem in any year.
- Protection of Health and Property. When the risk (probability and magnitude) of the hazard either bears significantly on the state of health of people or may result in loss of property so that immediate remedial action is needed, the following criteria should be considered:
- When it is deemed essential to reduce a potential hazard to protect health or prevent a substantial loss of property, a planned exposure objective for volunteers should be established not to exceed ten rem for an individual in a year. Under special circumstances, an exposure objective for volunteers not to exceed twenty-five rem in any one year may be set.
- When the risk of exposure following the incident is such that life might be in jeopardy, or there might be severe effects on health or the public or loss of property inimical to the public safety, the criteria for saving of human life should apply.

Detailed guidance and criteria regarding reentry activities may be found in EPIP-71, *Emergency Protective Actions and Reentry*, and EPIP-91, *Emergency Termination and Recovery*.

7.6 Termination of Protective Actions

Onsite protective actions will be modified or lifted at the direction of the ED following recommendation by the IC. This information will be communicated to appropriate onsite emergency response and facility personnel through established emergency communication systems. Changes to recommendations for affected offsite agencies will be communicated per EPIP-51, *Emergency Notifications* following coordination with local decision-makers.

Additional guidance for termination of protective actions may be found in EPIP-91, *Emergency Termination and Recovery*.

7.7 Shutdown of Operations

Shutdown of operations in facilities directly involved in the emergency is the responsibility of facility personnel, where practicable. If this is not feasible, shutdown will be performed by knowledgeable emergency response personnel.

Shutdown of operations in facilities not directly involved in the emergency is the responsibility of operations personnel in the building or facility. Site response guides and procedures (for example, FSPs and OSPs) address shutdown for normal operations and Operational Emergencies. These procedures, which are developed and maintained by facility personnel, are available to assist the operators in placing the building in a safe condition.

In addition, facility operations personnel are trained in the operation of the systems and are capable of taking appropriate corrective actions based on their training, knowledge, and experience.

7.8 Records

Declaration of an Operational Emergency may result in activation of the LLNL EOC. EOC personnel maintain records of information and actions relating to the emergency.

Emergency response information and follow-up health and hygiene surveys are documented in after-action reports and maintained indefinitely. Health Services personnel maintain indefinitely medical records relating to the emergency. See EPIP-71 *Emergency Protective Actions and Reentry* and EPIP-141 *Emergency Preparedness Program Administration* for specifics on records retention.

8 EMERGENCY MEDICAL SUPPORT

This section describes the system for medical support of Laboratory personnel, including those with radiological and/or hazardous material contamination. See Section 11 of this document for specific facility and equipment information

8.1 Medical Response System

LLNL's Emergency Management Division personnel, paramedics and emergency medical technicians, are the first responders to medical emergencies at LLNL. At the Livermore site, patients are evaluated and transported to the appropriate receiving facility in accordance with Alameda County Emergency Medical Services (EMS) policies and procedures. In general, basic life-support patients are transported to the Health Services Department during normal working hours. Advanced life-support patients, as well as patients needing emergency medical assistance outside of normal working hours, are transported to the appropriate offsite receiving facility. ValleyCare Medical Center in Pleasanton is the primary destination. Patients who meet Alameda County critical trauma criteria are transported to Eden Medical Center in Castro Valley (designated trauma center for southern Alameda County). During normal working hours, the Health Services Department provides treatment for ill and injured employees on a walk-in basis in addition to scheduled services provided in accordance with DOE O 440.1A.

For Site 300, the primary offsite receiving facility is Sutter-Tracy Community Hospital. For critical trauma patients, air ambulance transport may be utilized to transport patients to Eden or San Joaquin General Hospital in Stockton. The Site 300 Satellite Clinic provides services similar to those provided at the Livermore site, including walk-in services, scheduled appointments, and evaluation of ambulance transport-basic life support patients. Consultation with a physician at the Livermore site will be obtained according to established patient treatment policies and procedures.

In the event of a multi-casualty incident at either site, the IC, in consultation with the Health Services Medical director or designee, will resolve issues of triage and transport in accordance with Emergency Management Division emergency operations policies and procedures and the internal Health Services Department disaster plan. Site 300 also maintains an emergency management plan.

In the event of a site-wide incident, such as an earthquake, where outside resources may be limited, the self-help plan is implemented. This plan provides for additional support in the areas of triage and transport of injured personnel by first-aid trained volunteers.

The Laboratory maintains an MOU with Eden Medical Center and ValleyCare Medical Center for services in the event of a radiological incident. Included in the MOU are provisions for joint

training, drills and exercises, equipment maintenance, personnel support and procedures including chelation for internal transuranic contamination. Attachment D, Memoranda of Understanding, includes more information on the medical MOUs.

8.2 Staff

Fire Department personnel are trained and certified as Emergency Medical Technician-I by Alameda County and the State of California. Additionally, some fire personnel are State of California licensed and Alameda County certified paramedics who provide twenty-four hour, seven days a week coverage to the Laboratory as members of each company. See Section 11 of this document for additional staff and equipment information.

The Health Services Department, an Accreditation Association for Ambulatory Health Care accredited facility, is managed by a physician and includes physicians, nurse practitioners, registered nurses, clinical psychologists, x-ray technician, administrative personnel and medical assistants. Physician specialty training may include occupational medicine, emergency medicine, internal medicine, and preventive medicine. Nurse practitioners and nurses specialty training may include occupational health, adult health and emergency medicine. All professional staff have received basic life support training and staff who are authorized to function in the decontamination area have received radiation casualty management training from the Radiation Emergency Assistance Center/Training Site (REAC/TS). Treatment area personnel maintain advanced cardiac life support training. All licensed professional staff maintain current state licenses. Psychologists are available and trained in crisis intervention.

The satellite clinic at Site 300 is staffed by a registered nurse during normal work hours, providing basic health services and first aid. Off-hour support is provided by the Fire Department.

8.3 Equipment and Supplies

There are approximately fifty emergency boxes with first-aid supplies located strategically throughout the Livermore site and Site 300; the area self-help coordinators are responsible for maintaining these emergency boxes. The self-help plan provides a recommended set of supplies that areas may augment based upon numbers of personnel supported.

Patients contaminated with radioactive or toxic materials are treated in the Livermore site's Health Services Department decontamination area. This area is designed to protect the environment from contamination (see also Section 11). Bioassay and whole-body counting equipment for radiological contamination assessment is provided by the Hazard Control Department.

Equipment, monitors, and personnel protective equipment for the support of radiological incidents are housed at ValleyCare and Eden Medical Centers in accordance with the MOU, as well as at the main Health Services site. The Hazard Control Department is responsible for maintenance of this equipment.

Medical supplies for the administration of chelation therapy for patients with internal radiological contamination are stored in the Fire Department ambulances for transport to ValleyCare and Eden Medical Centers as well as at the main Health Services site. This equipment and medication is supplied and maintained by the Health Services Department.

8.4 Transportation

Injured personnel are transported from the scene to either Health Services or the appropriate offsite facility (see Part 8.1 above) by LLNL Fire Department ambulance (two at the Livermore site, one at Site 300). Personnel with known or suspected contamination are transported to the decontamination entrance of the Health Services Department.

Critically injured and radiologically contaminated victims are transported directly to Eden Medical Center by the LLNL Fire Department. Air ambulance service is requested in accordance with Alameda County critical trauma protocols and Emergency Management Division emergency operations policy and procedure by the IC. Alameda County is responsible for dispatch of the next available air ambulance. LLNL will provide equipment and expertise as needed at the receiving facilities in support of radiologically contaminated victims in accordance with the MOUs.

Communications to the receiving facility is the responsibility of the initiating organization. LLNL will communicate in accordance with the Alameda County EMS policy and procedure, and will also notify the Health Services Department of the transport. Medical staff at the Health Services Department will contact the receiving hospital regarding personnel transported from either medical facility.

8.5 Communications

The LLNL Fire Dispatch Center, which provides dispatch service for Alameda County, the City of Alameda, Alameda County EMS and Camp Parks in addition to the Livermore site and Site 300, is located at the Livermore site and operates under Alameda County EMS and OES policies and procedures. When active, the EOC monitors 400 MHz emergency radio traffic between the IC and dispatch. This radio is also monitored by the Health Services Department during normal work hours. The IC will keep the Health Services Department informed about the status of situations involving injured personnel. During normal work hours, the Health Services Department has responsibility for notifications to laboratory management and family members with regard to ill or injured employees; outside of normal work hours, the LEDO has notification responsibility. In the event of an Operational Emergency, LLNL will utilize the state incident command system for communication and mobilization of resources at the direction of the fire chief.

Additional communication tools include the WebEOC Communication system, used by the EOC and the OSCs to record and monitor information during extended Operational Emergency events and the ARES network.

9 EMERGENCY TERMINATION AND RECOVERY

This section describes the responsibilities for Operational Emergency termination and recovery planning and operations. Recovery includes incident assessments and investigation, recovery planning, scheduling, repair, restoration and return or relocation.

9.1 Emergency Termination

The emergency phase of an Operational Emergency is the time period during which an emergency condition exists, such as, Operational Emergency, Alert, Site Area Emergency, and General Emergency. During this phase, timely decisions are required to ensure protective actions are effective in minimizing the potential for health effects to onsite personnel and the public. The ED is responsible for terminating the emergency phase, completing appropriate notifications and entry into the recovery phase when the following general criteria is met:

- The emergency condition no longer exists and it appears unlikely conditions will deteriorate
- Implemented personnel protective measures, both onsite and offsite, are relaxed or restricted to controlled areas
- Evacuated areas may be re-entered though some clean-up and repair may be on-going or required
- The IC recommends that the ED consider termination
- The EMT and affected offsite response organizations concur
- A recovery manager is appointed, a recovery organization is established, and a recovery plan is developed, if required

Specific criteria and actions for terminating an emergency and initiating recovery operations can be found in EPIP-91, *Emergency Termination and Recovery.*

9.2 Recovery Operations

The purpose of the recovery effort is to return the affected facilities and areas to normal operations following the termination of emergency response. Normally the Fire Department IC will formally transfer control of the incident scene (facility and local affected area) to the ES&H team leader upon stabilization of the scene on completion of Fire Department activities. The IC may elect to retain control of the incident and delegate responsibility for the reentry phase to the ES&H team leader.

The ED, IC, or ES&H team leader will use established reentry provisions when the emergency condition has stabilized and radiological or other hazardous material releases, if any, have been

controlled and contained within established limits. The IC or ES&H team leader must authorize reentry actions that are conducted prior to the termination of the emergency.

Operational planning for facility reentry is the responsibility of the IC or ES&H team leader until the emergency has been terminated and will require detailed planning and consideration of safety precautions including the use of appropriate protective clothing, respiratory protection, and specific criteria for aborting reentry.

The ED is responsible for appointing a recovery manager, who will be responsible for developing and coordinating plans and schedules for recovery operations for both the facility and LLNL site. Plans and schedules for recovery operations must consider methods for protecting workers, other onsite personnel, and the general public. Once a recovery manager has been appointed, local planning for facility level recovery will require recovery manager approval of the plan.

The EOC, in coordination with NNSA and appropriate offsite agencies, is the focal point for the development of information to be disseminated to Federal, State, and local organizations regarding the emergency status and recovery operations. Recovery planning status information for the public will be released through appropriate State/local government agencies at either the JIC or individual agency public affairs offices.

See EPIP-91, *Emergency Termination and Recovery*, for more information on recovery operations.

9.2.1 Recovery Organization

Prior to emergency termination a recovery organization will be established and led by the recovery manager. The recovery manager will appoint a recovery team which may include, but is not limited to, advisors from the Environmental Protection Department, the Hazard Control Department, the Health Services Department, Plant Services, Public Affairs Office, and the Safeguards & Security Department, administrative, logistical, communications, and personnel support for the recovery effort are the responsibility of the recovery manager's department or program.

The responsibilities of the recovery manager may include:

- Development of a written recovery plan
- Selecting personnel for a recovery team
- Managing the recovery effort
- Coordinating Laboratory interactions with contractors, vendors, and offsite organizations
- Communicating and coordinating with offsite Federal, state, and local officials as needed
- Approving media releases (in coordination with NNSA) regarding recovery
- Ensuring that recovery operations are documented
- Issuing a final report

9.2.2 Reentry Phase

Reentry activities at a facility and locally affected areas are initiated when the emergency conditions have stabilized such that damage assessments can be safely accomplished. These activities may be conducted prior to the termination of the emergency to assist in recovery planning, or they may be conducted post-termination during the recovery phase of operations. Reentry planning should consider:

- Assessment of radiological or hazardous material contamination to determine areas potentially affected
- Review of exposure histories of personnel who will participate in reentry activities
- Availability and adequacy of installed instrumentation and/or portable monitoring equipment

The reentry plan should also describe: areas to be surveyed; anticipated contamination levels; protective equipment and shielding requirements; decontamination requirements; and communications requirements. The IC or ES&H team leader is normally responsible for the reentry phase, and during post-termination recovery phase must coordinate reentry plans with the recovery manager.

9.2.3 Recovery Phase

Once conditions have stabilized and termination of the emergency has been recommended, the recovery phase may be initiated. Steps in this process include:

- Assessment of the health and safety of potentially affected workers
- Assessment of hazards from the impacted facilities
- Assessment of the airborne release or ground spill
- Assessment of damage to critical systems and functions
- Accident investigation and root cause determination

The recovery manager has responsibility for the recovery phase, and once this phase begins the recovery team, in conjunction with the ES&H team leader, will provide the above assessments to the recovery manager.

9.2.4 Recovery Plan

The recovery plan, developed by the recovery team, is based on the information developed as described in section 9.2.3 above, and may consist of the following element:

- Identification of the impacted area through sampling and monitoring surveys.
- Identification of impacted facilities within the impacted area, and prioritization of these facilities based on their functional importance. The identified facilities will also include affected utility systems, such as, power, water, and communications.
- Characterization of hazards and identification of appropriate remediation methodologies.
- Identification of available recovery resources.
- Prioritization of recovery tasks based on resources available and the following suggested hierarchy:

  - Egress of workers sheltered onsite
  - Restoration of health and safety systems
  - Restoration of utility systems
  - Restoration of facilities critical to recovery operations
  - Environmental protection
  - Restoration of facilities critical to programmatic operations
  - Other concerns
- Recovery schedule. The schedule may be updated as new resources are acquired and new priorities are identified.
- Procurement of additional resources to support recovery operations.
- Public information notices regarding the status of the recovery effort.
- Notifications of and coordination with offsite agencies, including applicable regulatory notifications (for example, the EPA).

9.2.5 Resumption of Normal Operations

When the criteria established by the recovery team have been met and approval has been granted by cognizant organizations and agencies, the affected areas and facilities may be returned to normal operations, or operations relocated as necessary.

10 PUBLIC INFORMATION

The Laboratory's Public Affairs Office is responsible for providing timely and accurate information to the community, news media and Laboratory workforce on matters concerning health, safety and operations during and following an Operational Emergency at LLNL. It also provides guidance on communications issues to the EMT and Laboratory employees. During an emergency, the Public Affairs Office will act as the single point of contact for the news media, and as a principal source of information for Laboratory employees and community officials.

When appropriate during an emergency, the LEDO will activate the Laboratory's EOC. When the EOC is activated, the Public Affairs Office EOC liaison will serve as the Public Affairs Office representative to the EMT in the EOC. All information developed for release to the public will be reviewed and approved by the Public Affairs Office EOC liaison and the ED, with concurrence of the NNSA/LSO representative in the EOC.

Per the *Emergency Public Information (EPI) Plan*, it is expected that a written news release or media statement will be released within one hour of an event.

The Public Affairs Office EOC liaison will maintain contact with the public information organizations at NNSA/LSO, the University of California and Sandia National Laboratory Livermore.

10.1 Public Information Organization

The Public Affairs Office EOC liaison directs the emergency response activities of the Public Affairs Office. The Public Affairs Office EOC liaison is supported by a newswriter located in the EOC and by personnel staffing the Public Affairs OSC or if activated the JIC.

Specialists in news media relations, community relations, and employee communications, supported by administrative and technical support personnel staff the Public Affairs Office OSC or the JIC. Under the direction of a Public Affairs Office OSC manager who reports to the Public Affairs Office EOC liaison, the public affairs office professional staff will respond to news media and public inquiries, issue news releases and other formal communications, host visiting news media, arrange news conference and interviews, and monitor news media reports. The Public Affairs Office OSC manager will apprise the ED and the EMT, through the Public Affairs Office EOC liaison, of news media, community and employee interest in the emergency as well as rumors concerning emergency conditions or response.

10.2 Public Information Facilities

The Public Affairs Office OSC is a location that serves as a communication center and work area for LLNL emergency public information staff and a briefing center for news media. The Public Affairs Office OSC will be activated and used in the event of an operational emergency that does not require or warrant JIC activation, or may be utilized until the JIC can be activated. New emergency information will be released from the Public Affairs Office OSC via press releases and media briefings. Media monitoring, response to public and media telephone inquiries, employee communications, community relations, and rumor control will be handled from the Public Affairs Office OSC. The Public Affairs Office OSC is located in the Public Affair Office complex at the Laboratory's East gate and includes work areas, a communications center and a news media briefing area capable of seating approximately twenty members of the media. The Public Affairs Office OSC is equipped with telephones, phone lines for computer hookup, overhead and video projection capability, public address system, podium, copier, fax machine, radio and television sets, toilet facilities, adequate parking space.

Key LLNL Public Affairs Office staff are equipped with pagers, cellular phones, laptop computers and two-way radios with access to Laboratory frequencies. A Public Affairs Office duty officer is on call twenty-four hours a day, seven days a week.

10.2.1 Joint Information Center

A JIC may be established at the Alameda County Office of Emergency Services in Dublin, California. The JIC is the location for coordination and release of information in the event of a LLNL emergency with potential for offsite health and safety impact and need for public protective action. Public information officers from Federal, State, and local ERO will come together at the JIC to coordinate and release emergency information to the public through the news media. New emergency information will be released from the JIC via press releases and media briefings. Once activated, media monitoring, response to public and media telephone inquiries, employee communications, community relations, and rumor control will be handled from the JIC. A senior NNSA public information officer at this location will ensure coordination of information with offsite agency spokespersons. The JIC is equipped with telephones, phone lines for computer hookup, overhead and video projection capability, public address system, podium, copier, fax machine, radio and television sets, restrooms and adequate parking space.

LLNL Public Affairs Office representatives may be dispatched to an emergency scene if conditions permit or to a local hospital to meet with news media, who may come to these locations. The Public Affairs Office role will be to support rumor control and direct news media to the location where new information is being released—the Public Affairs Office OSC or the JIC, if it is activated.

10.3 Public Education

The LLNL Public Affairs Office will establish an emergency public education program. In coordination with appropriate offsite agencies, a brochure will be developed instructing the public about how they will be alerted and notified by local officials and actions to take in the

event of a hazardous material release affecting Alameda County or the City of Livermore. LLNL assists Alameda County in brochure development and annual distribution. Annually, LLNL will also implement a program of communication to Laboratory neighbors concerning safety, hazards, and emergency preparedness. Information will be strategically communicated using existing Public Affairs Office community outreach and education programs.

10.4 Public Inquiries

In the event of an emergency the Public Affairs Office will be the single LLNL point of contact for the news media and the principal source of information for Lab employees and community officials. Public Affairs Office personnel will respond to calls for information from the general community as resources allow and will use only news releases and other approved information to answer questions.

The Public Affairs Office will also make available and publicize through the news media, a telephone number and Website the public may contact for updated emergency information. If the JIC is activated, all calls from the public and media will be referred there for response. Local government will support response to local public calls concerning the offsite emergency response and public health and safety.

10.5 National Nuclear Security Administration Field and Headquarters Coordination

NNSA/LSO will assign a public affairs officer in the EOC who will be responsible for communicating with NNSA/DOE-HQ public affairs representative. If necessary, the Public Affairs Office EOC liaison may communicate directly with the HQ representative or delegate such activity to the Public Affairs Office OSC manager.

11 EMERGENCY RESPONSE FACILITIES AND EQUIPMENT

Emergency facilities and equipment are maintained adequately to support the ERO. Emergency facilities include the EOC and alternate EOCs (including Site 300), the OSCs, the JIC, the Tactical Operations Center, the Fire Department stations, Health Services facilities, the EBCC, and the ECC.

Equipment includes information management and communication systems that are capable of transmitting required notifications of emergency events and necessary exchanges of information. Various emergency alarm systems are installed to provide for effective emergency response and emergency protective actions that may be required.

11.1 Emergency Facilities

11.1.1 Emergency Operations Center

The EOC is the coordination and control point for Operational Emergency support efforts. It provides a location and a system from which the ED and EMT assess, evaluate, coordinate, and direct emergency support activities. It is the focal point for emergency notifications and reports and for liaison with Federal, State, and local response organizations.

The facility that temporarily houses the EOC is constructed with a steel girder frame on a concrete slab foundation to seismic standards level PC-2, important facility. The building is protected by an automatic fire sprinkler system. As a temporary facility, the ventilation system does not include a hazardous material high-efficiency particulate air (HEPA) filtration system. All essential emergency electrical components are connected to emergency power with a back-up diesel generator.

The EOC is organized into five primary functional areas:

The Emergency Management Team — This is the area where the ED, response manager, and designated management representatives operate, providing management for the overall emergency response and recovery operations.

Consequence Assessment — This area provides initial “worst case” data, classification validation, and an interface with the field monitoring teams for collection and evaluation of field monitoring data. Equipment includes computer modeling capabilities and NARAC connectivity.

Communications Center	This area contains equipment for monitoring onsite fire and security radio frequencies, secure telephone and fax capability, and amateur radio emergency services equipment.
Public Affairs	This is a working area for the development of press releases regarding an emergency situation.
DOE/NNSA Office	This area is used by NNSA/LSO to support response oversight activities and communications with the ECC.

11.1.2 Alternate Emergency Operations Center

If habitability or accessibility issues preclude use of the EOC, the EOC location will move to the Hazard Control Department OSC. This is a dedicated facility that houses communications equipment and redundant consequence assessment resources. It is also the staging location for field monitoring team deployment.

Site 300 also has the capability to function as a stand-alone EOC in the event of an Operational Emergency primarily affecting that site. The Site 300 EOC may be activated at the request of the on-scene IC, the Site 300 manager, or the on-duty LEDO. In the event of Site 300 EOC activation, the Livermore EOC may also be activated by the LEDO should the emergency warrant notifications or additional emergency resources from Livermore. See the *Site 300 Emergency Management Plan.*

11.1.3 Operations Support Centers

The Laboratory uses OSCs as technical operations centers. These centers are located throughout the Laboratory within organizations that may be called upon by the ED to ensure an adequate level of support for the onsite response and recovery activities. These organizations include the Environmental Protection Department, the Hazards Control Department, the Health Services Department, Plant Services, the Public Affairs Office, the Safeguards & Security Department, and Site 300. Each OSC maintains the communications and information management capabilities that are necessary to enable connectivity with the EOC. The physical configuration of individual OSCs is the responsibility of each organization, but includes, at a minimum, telephone, fax and WebEOC connectivity as well as ARES support.

11.1.4 Joint Information Center

In the event of an Operational Emergency with potential for offsite health and safety impact, a JIC may be established by the Alameda County Office of Emergency Services. Public information officers from Federal, State, and local emergency response organizations will come together at the JIC to coordinate and release emergency information to the public through the news media. See Section 10, Public Information.

11.1.5 Security Control Centers

Tactical Operations Center In the event of a security-based emergency, security will activate the Safeguards & Security Department Tactical Operations Center, a master coordination and control point for security-related Operational Emergency efforts. A complete description of the Safeguards & Security Department Tactical Operations Center, as well as its operation and function, are available in the Protective Force Division's emergency contingency plans.

Central Alarm Station (CAS) The Protective Force Division's Central Alarm Station (CAS) is one of two continually staffed security consoles that are operational twenty-four hours a day, seven days a week. The CAS is the primary dispatch center for the Protective Force Division. Additionally, the CAS is the primary telephone operator for LLNL during weekday off-hours, weekends, and holidays. To respond to the Laboratory needs, the CAS has the ability to contact qualified technical experts in response to the Laboratory's emergency response program, the DOE National Emergency Response Program, LEDOs, NNSA/DOE, facility point of contacts, LLNL Fire Department, Laboratory's EOC, and other Laboratory and national needs.

11.1.6 Fire Department

LLNL maintains professional Fire Department stations at two locations that are staffed twenty-four hours a day. Station One is located on the Livermore site. The station houses fire apparatus, firefighters and the Emergency Management Division's administrative and occurrence reporting staff. Station One is nominally18,000 square feet in area, and was renovated in 1996.

Station Two is located at Site 300. The facility houses fire apparatus, firefighters and officers. Station 2, is nominally 6,800 square feet in area and was placed in service in September 1999. Both facilities are designed to meet Uniform Building Code seismic standards for an important facility. As such, they are designed to remain functional after a major earthquake. Both stations are connected to back-up generators that will provide power during an extended power outage.

11.1.7 Medical Facilities/Decontamination Center

The LLNL maintains a 25,600 square foot single-story medical facility at the Livermore site designed to meet the health care needs of Laboratory personnel. Professional staff includes physicians, nurse practitioners, registered nurses, an x-ray technician, clinical psychologists, administrative personnel and medical assistants. Available services include illness and injury, physical examinations and counseling. In addition, the facility includes a decontamination area, designed for the treatment of injured or non-injured radiologically or chemically contaminated personnel. The medical facility maintains an emergency entrance for ambulance traffic and a separate decontamination entry area.

The medical facility is built on a concrete slab floor and is constructed of fire-resistant materials. The building is designed to withstand moderate earthquakes. The entire facility is protected by an automatic fire sprinkler system; automatic fire detection, heating, ventilation, lighting, and overhead communications systems are also provided. Essential emergency power is provided by an emergency generator. In addition, a 5000-gallon emergency supply of water is maintained.

The decontamination area is divided into three to five rooms for a total of approximately 1265 square feet, which include: hot/warm/cold dressing rooms, airlocks, showers, supplies and fan rooms. The heating and ventilation is independent from the main HVAC. This system includes a HEPA filter system. In addition, drainage from the decontamination area is collected in a waste retention system.

Adjacent to the medical facility is a large open triage area for emergencies involving large numbers of people. The triage area provides room for staging of different levels of patient care as well as providing easy access for vehicles transporting patients. A storage kiosk has four closets that hold emergency supplies, water, and telephones. Electricity and outside lights have back-up emergency power.

The satellite medical facility at Site 300 provides physical exams and first-aid services. Located adjacent to the Fire Department, the medical facility is approximately 1320 net square feet in area and includes exam rooms, a medical laboratory, and a shower room for minor contamination or chemical spills. The entire facility, built in 1999, is protected by an automatic fire sprinkler system; heating, ventilation, lighting, and overhead communications systems are also provided. The facility is designed to the same seismic standards as Fire Station Two and shares the standby generator. Ambulance access is available to the facility, which is staffed with a registered nurse full-time, Monday through Friday.

11.1.8 Executive Business Coordination Center

The EBCC is an emergency response facility located within the Laboratory director's area, where the Laboratory director and/or designated staff gather to monitor the progress of the emergency and provide business continuity. They are connected to the EOC via a WebEOC link and a designated LEDO liaison.

11.1.9 Emergency Communications Center

The ECC oversees the site response and provides support, assistance, and guidance to the site Contractor EOC. The ECC also provides information to NNSA/LSO management, the NNSA/DOE-HQ EOC, members of the Press, and coordinates with other Federal agencies on a local level as necessary. In the event that an emergency situation requires additional assets, assistance, including long-term monitoring, the ECC will coordinate notification activities with other DOE, local and Federal agencies.

11.2 Emergency Equipment

During an emergency, LLNL has at its disposal a variety of specialized equipment located at the Livermore site as well as Site 300. This equipment is maintained by both LLNL and it's subcontractors.

11.2.1 Communications Equipment

Telephone System Phones are located at all major buildings, operations areas, and some hazardous waste management units. For emergency reporting purposes,

at least one readily accessible analog telephone shall be located in each LLNL facility. This telephone shall be in an area that is not subject to being locked. For a larger facility, multiple telephones shall be placed so that the travel distance from any location in the facility to the nearest telephone is no more than 200 feet (*ES&H Manual*, Document 22.5-Fire, Section 4.13-Emergency Reporting). An emergency situation onsite can be reported by dialing 911. These calls are answered by the Fire Department Emergency Dispatch Center and monitored by the Safeguards & Security Department CAS. During the workday, emergency medical calls are monitored by the Health Services Department. The telecommunications system in the EOC has classified and unclassified telephones as well as ring-down service to the dispatch center and Site 300. Analog phone lines are also located in the EOC as back up to the primary electricity-based phone system.

Radio Systems

Radios are used by appropriate personnel, such as the Fire Department, security and the ERO. Incoming and outgoing radio communications are monitored and recorded in the dispatch centers. The radios are the first line of communication for emergency response. Both sites have trunked 800 mhz frequency capability. Dispatch consoles for fire and security are interconnected via a shared central electronic bank providing dispatchers the ability to communicate with each other.

PA Systems

The site evacuation page systems are used to communicate emergency alarms and instructions to onsite workers. Fire dispatch makes all announcements on the evacuation page system. Speakers are located throughout operations areas and all major buildings.

Paging Systems

The primary emergency communications system for activation of the ERO members consists of an automated paging system, which is located in the Fire Department Consolidated Dispatch Center. If the Communicator fails, the Fire Department Consolidated Dispatch Center has the availability of several independent telephone systems to allow for completion of notifications.

Group Page for the Hearing Impaired

Employees who self-identify as hearing impaired are issued an alphanumeric pager to wear at all times while on site. This group page will be activated by fire dispatch to notify these employees about emergency announcements made on site.

WebEOC

WebEOC is a web-based emergency information system that provides access to real-time information that can be simultaneously shared among emergency response teams, decision makers, and organizations during the planning, response and recovery phase of an emergency. This system is utilized in the EOC, Tactical Operations Center, OSCs, EBCC, ECC,

JIC, and Site 300.

11.2.2 Heavy Construction Equipment

A complete list of heavy construction equipment is available from the Plant Engineering Department Office or during an emergency, from the Plant Services' OSC.

11.2.3 Contamination Assessment Equipment

Bioassay and whole-body counting equipment for radiological contamination assessment is provided by the Hazards Control Department.

11.2.4 Alarm Equipment

Employee emergency alarm systems. Employee emergency alarm systems at LLNL consist of the evacuation page system and the nuclear criticality accident alarm systems. When an emergency occurs that could endanger the health and safety of personnel, employee alarm systems and protective actions are initiated either locally or site-wide, depending on the extent of the problem.

Radiation alarm signal. The radiation alarm signal is a clarion horn sound. This sound indicates a radiation emergency and is accompanied by rotating red/magenta beacon lights on the outside or inside of buildings that might be affected. Further instructions over the site evacuation page system or from the assembly point leader will be provided following the activation of a radiation alarm.

Fire alarms. Fire alarms are activated by automatic fire protection and/or detection systems, such as sprinkler system water flow, smoke and heat detectors, or manual pull boxes. Personnel will be notified of the activation of a fire alarm via the emergency voice alarm system.

11.2.5 Rescue Team Equipment

The Fire Department manages and maintains apparatus and equipment used in fire fighting, search and rescue, hazardous material and emergency medical responses.

11.2.6 Sanitation, First Aid and Survival Equipment

Assembly points are equipped with basic first-aid supplies and additional supplies as determined by the self-help program. There are approximately fifty supply boxes located throughout the site to house these supplies.

11.2.7 Transportation Equipment

The Fire Department operates three paramedic-staffed ambulances on twenty-four hours a day, seven days a week basis; two ambulances service the Livermore site, and one services Site 300. Mini-motor coaches, operated by the Laboratory Fleet Management Department, can be used to transport injured employees if requested by the IC or the ED.

11.2.8 Personnel Protective Equipment

Personnel protective equipment is maintained by the Hazard Control Department and housed at various locations throughout the site. Personnel protective equipment for the Fire Department meets National Fire Protection Association standards.

11.2.9 Gas- and Liquid-Monitoring Equipment

Air particulate samplers, air vapor samplers, hand-held combustible gas analyzers, and other equipment are maintained on site by the Hazard Control Department and Environmental Protection Department.

11.2.10 Damage Containment Equipment

The Emergency Management Division maintains some containment equipment, and other equipment is staged in the Laboratory corporation yard. During an emergency, information on specific equipment is available from the IC and the Plant Services OSC.

11.2.11 Fire Department Equipment

The Fire Department manages and maintains apparatus and equipment used in fire fighting, search and rescue, hazardous material and emergency medical responses. Inventories are available at the Fire Department. Apparatus and equipment meet National Fire Protection Association standards.

11.2.12 Emergency Power Equipment

Buildings containing systems that may be needed during a power outage are supplied with emergency generators. Portable generators are available through both the Emergency Management Division and Plant Services.

11.2.13 Logistic Support Equipment

Logistic support equipment is maintained and supplied by the various EMT organizations and is available through the IC or OSCs. Additionally, the Fire Department maintains facility key plans and run cards for all facilities.

11.2.14 Consequence Assessment Equipment

The consequence assessment workspace in the EOC has two PCs with the most recent versions of plume projection software (Hotspot, EPIcode, and ALOHA computational models) for calculating airborne release consequences associated with hazardous materials incidents. There is an additional PC for monitoring atmospheric (weather) data and WebEOC data. A similar set of PCs with the same computational models is located in the Hazards Control Department OSC and is capable of verification and/or backup as needed. Additionally, a laptop computer with the same computational models is located in the EOC's consequence assessment workspace and is capable of providing secondary backup.

11.2.14.1 Meteorological Monitoring

LLNL has two meteorological monitoring towers, one located at each site. Sandia Livermore has an additional tower that is also monitored by LLNL.

12 Training and Drills

The goal of the ERO training and drill program is to ensure that the ERO is prepared to carry out emergency response functions during an Operational Emergency. The ERO training and drill program is administered in accordance with Hazard Control Department policy and the LLNL *Training Program Manual (ES&H Manual Document 40.1)*.

There are three emergency management training program categories that will be designed, developed, and conducted for LLNL: general employee training, ERO training, and drill and exercise evaluator and controller training. They are designed to meet the following goals:

- Provide general instructions to the onsite population regarding potential hazards, methods of alerting and protective actions that may be required to carry out
- Provide basic and advanced responder training to members of the ERO
- Provide problem solving drills and tabletop exercises to the members of the ERO to enhance their skills
- Continually improve emergency management/emergency response training by establishing methodologies for change to incorporate new ideas and lessons learned
- Provide appropriate offsite agencies the opportunity to participate in selected LLNL training
- Provide a cadre of trained evaluators and controllers for the drill/exercise program

12.1 Courses

The actual functions performed and responsibility levels of the ERO position are used as the basis for an individual's required training courses. Institutional training requirements that are mandatory for a specific position are approved by the LLNL training program committee and are identified in the Laboratory's course catalog. Non-institutional courses may be scheduled as needed.

12.2 Training Requirements

Each ERO training course is developed with terminal and enabling learning objectives that are contained in a course syllabus. The course syllabus also contains additional design elements such as duration, method of delivery, prerequisites and credit hours (where applicable) and retraining frequency. An outline and complete matrix of the ERO training courses and associated ERO drills are documented in EPIP-123, *Emergency Response Organization Training and Drills.*

12.3 Examinations

Written student examinations are based on course learning objectives. These examinations are provided with each initial and refresher ERO training courses. The ERO training course examination results are maintained by the records office of the Hazard Control Department, safety education and training section. Examination materials are housed securely in a location available only to Emergency Preparedness Section instructional staff and other authorized personnel.

12.3.1 Retesting/Retraining Policy

An eighty-percent score is the minimum needed to pass all exams. Instructors sign the student answer sheet acknowledging that they have reviewed the results with each student. A student who does not achieve an eighty-percent score is provided a review/remediation session and retesting (using a different exam) at a time and place mutually agreed upon by the student and the instructor. Each student signs course attendance roster to verify their attendance at the described course.

If, after the review/remediation and retesting the student does not achieve an eighty-percent score, the student must attend classroom training and be tested again. If the student fails the test a third time, the student's manager is informed of the results and a decision is made concerning the individual's ERO assignment.

12.4 Record Keeping

The Livermore Training Records and Information Network (LTRAIN) requirements tracking module is the Laboratory database used to track the training requirements applicable to a person's assignment at the Laboratory. LLNL training policy requires that course completion records be entered into LTRAIN within ten business days. Additionally, a summary of the ERO training requirements for emergency response personnel and emergency preparedness courses provided at LLNL is included in EPIP-123, *Emergency Response Organization Training and Drills*. EPIP-123 also describes detailed record keeping for training, instructor qualification, and training support provided to complement the basic cadre of ERO training that is made available to LLNL staff. The safety education and training section is responsible for entering ERO training records into LTRAIN.

12.5 Offsite Personnel

A computer-based training curriculum has been developed for LLNL site personnel for emergency conditions and is available to site visitors, vendors and sub-contractors.

12.6 Offsite Training Support

Regular meetings of the VEPWG are scheduled and held to share training opportunities and plan cooperative responses to emergency conditions (also see Section 3).

12.7 Offsite Personnel Training

LLNL makes an annual written offer to provide selected training to appropriate offsite responders. For those service support organizations (mutual aid) that may enter the site as a part of their response, training also includes site access procedures and site familiarity. In addition, appropriate offsite agencies are offered the opportunity to participate in annual drills/exercises and response personnel training.

12.8 Instructor Training and Qualification

Technical staff members who have met instructor qualification requirements are used to deliver emergency preparedness training curriculum. The qualification of available staff is administered by the safety education and training section leader, upon completion of criteria set forth in EPIP-123 *Emergency Response Organization Training and Drills.*

12.9 Drills

The emergency preparedness drills provide a supervised, "hands-on" training component for members of the ERO as well as provide an opportunity for the ERO to demonstrate and maintain individual and organizational capabilities. Training courses are or may be identified as having "hands-on" or "on-the-job" training component. The complete listing, applicability and frequency of these drills associated with ERO training courses are documented in EPIP-123.

12.9.1 Evaluation and Corrective Action

Drills that are conducted and planned are designed and evaluated by trained drill controllers and evaluators. Upon completion of each drill the controller/evaluator criteria checklists are consolidated by the lead controller(s)/evaluator(s) with deficiencies and corrective actions input into a deficiency tracking or lessons learned database. Additionally, input is collected from each activated Emergency Response Facility via a critique process. These critiques are consolidated by the Emergency Preparedness Section and distributed in an after-action report. A corrective action plan is generated from the after-action report and reviewed by (or approved by) the EPDEPC.

13 EXERCISES

13.1 Exercises

Exercises are conducted to provide evaluation of emergency response training and to evaluate LLNL's ability to respond effectively to an emergency. The exercise critique and evaluation process provides feedback for improving weaknesses in policies, plans, facilities, equipment, training and emergency response performance. Participation in exercises is required for all personnel who would be expected to participate in an actual emergency response. Emergency exercises require substantial effort to plan and coordinate effectively. The use of a realistic scenario and adequate controls enhances the validity of the exercise to evaluate operational procedures and EPIPs.

An exercise is a comprehensive performance test of the integrated capabilities of the ERO. Exercises test the adequacy and effectiveness of:

- Organizational command and control
- Implementation procedures
- Notifications and communications networks
- Emergency equipment
- Training
- ERO performance
- Overall emergency response program performance

Exercise-specific objectives are used to supplement the core objective set to define the exercise scope, specify the emergency response functions to be demonstrated, identify the extent of organizational/personnel participation, and identify the spectrum of exercise activities to be accomplished or simulated. Not all emergency response elements are demonstrated in every exercise, and a systematic approach is used to demonstrate all ERO capabilities over a period of five years, consistent with the DOE emergency management guide.

The LLNL exercise program validates the various emergency response elements over a multi-year period. The program provides periodic drills and exercises to evaluate emergency response capabilities and ensure that members of the ERO are prepared to respond appropriately to an actual emergency. The program also ensures that the local offsite organizations are offered participation in an exercise at least every three years.

Specifically, the exercise program provides the following:

- Management and administration of the exercise planning process

- Conduct of exercises
- An evaluation process
- An improvement process that includes lessons learned and corrective actions

13.1.1 Evaluation and Corrective Actions

Exercises are formally evaluated based on evaluation modules developed from exercise objectives and operating procedures. Evaluators, generally subject matter experts, are formally trained on the exercise evaluation process and also receive training specific to the exercise they will evaluate.

Controllers, generally subject matter experts, are assigned to each venue participating in the exercise. Controllers are also formally trained, including exercise-specific training. Controllers and evaluators who participate annually in an exercise within their area of expertise, are considered current for purposes of ERO training.

Following an exercise, each venue conducts an immediate hot-wash of exercise events. A formal all-hands critique, to include representatives from all venues, is also held. All critique information is documented, and findings and observations are developed. Findings and observations are then analyzed and corrective action plans are developed. Modifications to organizational plans and procedures as a result of these corrective actions are the responsibility of the individual organizations, with the oversight of the EPDEPC.

13.2 Offsite Coordination

Exercise activities associated with offsite organizations are coordinated by the EPDEPC. Offsite partners of LLNL include but are not limited to Sandia Livermore, Livermore-Pleasanton Fire Department, Alameda County Fire Department, Livermore Police Department, Alameda County Office of Emergency Services, the California Highway Patrol, and the Zone 7 Water Agency.

13.2.1 Exercise Design and Development

Planning and scheduling of exercises requires the involvement and cooperation of multiple organizations at LLNL. To that end, the EPDEPC was developed. The EPDEPC is empowered through the EPMC and is chartered to provide consistent direction and guidance for the planning, preparation, conduct, control and evaluation of all integrated drill and exercise activities at LLNL. See EPIP-131, *Exercises,* for a more detailed discussion of the EPDEPC, its membership and charter.

A scenario development working group is established for each exercise evolution at LLNL. This group is co-chaired by a representative from the organization of primary focus for the exercise, and contains members from the planning committee along with selected specialists. DOE G Vol. VII Table 1.2 provides the general framework for the planning process at LLNL.

13.2.2 Exercise Package

The exercise package contains all the documentation necessary to control and evaluate the exercise; however, the extent of information will vary with the scope and complexity of the specific exercise. The exercise package is developed in four sections:

- Design and development documents
- Scenario material documents
- Control and evaluation documents
- Administrative and logistics documents

13.2.2.1 Design and Development Documents

The design and development documents provide the foundation of the exercise development process and include the following:

Exercise purpose. The purpose defines the reason(s) for developing the exercise. It includes DOE Orders and State of California Regulations.

Scope. The scope identifies all participating organizations, the extent of participation, and the requirements satisfied by the conduct of the exercise.

Specified objectives. Each exercise objective clearly states what is to be demonstrated. Objectives should be attainable and measurable. Evaluation criteria should be developed to define how objectives will be measured by exercise evaluators.

Design and development guidelines. This section describes any limitations placed on the design and development of the exercise, the exercise protocol, and a list of pre-approved simulations.

- Limitations are management policies and guidelines of concern to the exercise developers and scenario designers. They include such issues as conducting exercises on weekends, overtime restrictions or authorizations, and financial constraints.
- Protocols (rules of conduct) remind responders of drillmanship and safety issues.
- Pre-approved simulations list the major simulations applicable to the exercise. Examples include but are not limited to pre-determined meteorological data, use of a smoke generator to simulate fire/smoke, and use of protective equipment.

Safety planning. A safety plan will be developed for each exercise. During an exercise, all participants must comply with established safety rules and practices. Participants must understand that the safety of exercise participants, non-participants, the public and the environment is of the highest priority. The plan addresses generic and specific safety concerns, mitigative solutions, and required actions/notifications if a safety concern or emergency occurs during an exercise.

Security Planning. A security plan will be developed for each exercise. Planning and management of exercises include provisions for participation of appropriate security personnel.

Persons involved in exercise planning must be sensitive to information or activities that may have security implications. An exercise security plan is an effective method of documenting

security concerns and solutions. The plan addresses generic and specific security concerns, mitigative solutions, and required actions/notifications if a security problem or emergency occurs during the exercise.

The plan establishes parameters for exercise design, development, and conduct in view of identified security issues. Controllers are responsible for conducting the exercise within security limitations; however, all participants must comply with security requirements. Special provisions should be made for visitors and observers since they may not be familiar with DOE or site security requirements.

13.2.2.2 Scenario Materials

Scenario materials provide the framework, based on the design and development documents for which the participants will respond. The scenario materials consist of the following:

Scenario narrative. The scenario narrative is a storybook summary of the background, initial conditions, initiating events, and expected responder actions. It contains descriptions of the simulated emergency situation, including the overall sequence of events, details, supporting data, and timing of activities.

Master scenario events list. The master scenario events list contains all the details required for the control organization to manage the exercise, including the message injects, contingencies, and other control tools.

Message injects. Message injects include instructions to controllers to begin simulations, insert information, provide earned information, acting instructions, and contingency messages. They should be formatted/presented in such a manner as to reflect the actual data that would be observed by responders in a real event.

Exercise data. Data varies greatly depending on the scope of the exercise. Exercise data may include general and facility-specific, meteorological, hazardous material, and medical information.

- **General facility information** is important when non-facility personnel participate in the exercise. This information includes a facility description; area, site, and facility maps; mission description; and emergency information.
- **Specific facility information** provides operational data at the time of the event. These data may include diagrams, schematics, and data tables that augment the scenario.
- **Meteorological data** provide weather conditions and forecasts, both real and simulated, as required.
- **Hazardous material data** may include radiation or chemical plume plots and tables, decontamination levels, and exposure levels. The technical basis and assumptions used to develop this data should be provided.
- **Medical information** includes a description of medical conditions and moulage procedures, actor behavior instructions, and vital signs.

13.2.2.3 Evaluation and Control Documents

This section of the exercise package provides the materials needed to formally evaluate and safely control an exercise. This section contains the following:

Evaluator and controller organization. This document identifies the number, qualifications, and providing organization of the evaluators and controllers.

Evaluator instructions. This document provides the instructions that are universal to each evaluator. These include the methodology for recording observations, interaction with responders, discussion of the evaluator tools, and schedule of events from the exercise-specific training through the completion of the evaluation report.

Evaluator modules. The evaluator module lays out the exercise objective with the evaluation criteria. An evaluator module is normally tailored to each evaluator position. It will include an evaluator's timeline to time-record observations and a series of checklists to record observations of evaluation criteria. The evaluator modules are based on the evaluated organization's plans and procedures.

Controller instructions. This document provides the instructions that are universal to each controller. These include methodology for recording observations, interactions with responders, discussion of providing information, discussion of the use of contingency messages, and schedule of events from the exercise specific training through the evaluator/controller critique.

Telephone directory. This section consists of the internal communications directory of the control organization.

13.2.2.4 Administrative and Logistics Documents

Administrative section. This section contains the master exercise schedule from initial planning meetings through final evaluation and corrective action plan, and any other exercise related administrative information.

Logistic section. This section, based on the exercise scope, may contain the following:

- Source and list of exercise simulations
- Health and safety items for participants (for example, meals and water)
- Transportation plan to move participants
- Controller and evaluator vests and communications equipment

13.3 Evaluation Standards

LLNL uses the following standard performance measures for exercise evaluation:

Superior performance. The responders met their exercise objective. Their performance in accomplishing this objective demonstrated innovative and highly effective completion of their assigned tasks. This rating must be justified and assignment of this rating is strictly limited.

Met. The responders met their exercise objective.

Met with improvement items. The responders met their exercise objective in accordance with plans and procedures, but there was difficulty in documented areas.

Not met, weakness. The responders did not meet their exercise objective, and the objective does not have a direct impact the health and safety of the workers or responders. This rating must be justified.

Not met, deficiency. The responders did not meet their exercise objective, and the objective does have a direct impact the health and safety of the workers or responders. This rating must be justified.

13.4 Evaluation Report

The evaluation report will be drafted by the evaluators. Their completed evaluator modules will be collected and compiled by the Emergency Preparedness Section. The written report will then be reviewed by the EPDEPC for accuracy and completeness, then forwarded to the chair of the EPMC for review and concurrence.

The draft report will be delivered to NNSA/LSO not later than thirty days after the exercise for review and comment. The Emergency Preparedness Section will resolve the comments, publish and distribute the final report.

The final report will include:

- Executive summary
- A list of organizations, the number of objectives, and the classification of the objectives
- An organization by organization discussion of performance
- Schedule of corrective actions
- The completed evaluator modules (limited distribution only) as an attachment.

14 PROGRAM ADMINISTRATION

14.1 Emergency Preparedness Administration

The associate director of SSEP, Dennis Fisher, is the emergency management program administrator.

Dr. Dennis Fisher
LLNL L-668
7000 East Avenue
Livermore, CA 94550
925-422-3343

The Hazards Control Department houses the Emergency Preparedness Section. The Emergency Preparedness Section leader manages the emergency preparedness program under the oversight of the EPMC. See the EPlan Section 2 for the emergency preparedness organization.

14.2 Documentation

The Emergency Preparedness Section ensures adequate documentation of technical data, which supports the overall emergency preparedness program, is maintained. This information generally falls into three categories: technical supporting information, emergency preparedness documents, and records. The program administrator ensures that up-to-date (controlled, if applicable) copies are maintained, information is properly distributed, documents are updated when needed or required, and that required supporting information is maintained. Technical supporting information includes diagrams, illustrations, maps, procedures, equipment lists, and document references.

In addition to supporting information, the Emergency Preparedness Section administers the development of documents such as facility emergency plans, hazard assessments, ERAPs, and EPZ documentation. Records that are important to maintain in an auditable form include training records, drill and exercise records, evaluation reports and records resulting from actual emergencies.

14.2.1 Document Control

The Emergency Preparedness Section is responsible for LLNL emergency preparedness document distribution and updates. Format, content and overall control of these documents is described in EPIP-142, *Emergency Preparedness Document Development and Maintenance*. The annual review and update of documents is described in EPIP-141, *Emergency Preparedness*

Program Administration. In addition, DOE Order 151.1 requirements are cross-referenced to the EPIPs in Attachment C.

14.3 Self-Assessment

To ensure compliance with DOE Order 151.1, the Emergency Preparedness Section conducts an annual self-assessment of emergency preparedness, based on a third-party review. An assessment plan is developed and approved prior to each assessment to ensure all emergency preparedness program elements are reviewed at least bi-annually. Recommendations and/or findings from the self-assessment are incorporated into an overall corrective action plan for emergency preparedness, which also includes corrective actions derived from the exercise after action reports and drill evaluations conducted during the year (fiscal). This corrective action plan incorporates findings from external and internal audits conducted during the year.

14.4 Emergency Readiness Assurance Plan

Readiness assurance includes the necessary assessments and documentation to ensure that stated response capabilities are sufficient to implement emergency plans. The annual ERAP provides documentation of the emergency planning and preparedness activities for LLNL. A format provided by the NNSA summarizes essential emergency preparedness program activities for the preceding fiscal year and projections for activities for five years ahead. When completed, the ERAP is forwarded to the NNSA/LSO.

A project management plan to support a description of the emergency preparedness program, describing emergency preparedness areas of effort and a schedule of deliverables, may also be prepared by Emergency Preparedness Section for the fiscal year.

Performance metrics, as specified by NNSA/LSO, describing emergency preparedness functions and events are prepared quarterly and submitted for review.

14.4.1 Emergency Preparedness Corrective Action Tracking

Findings and emergency preparedness corrective actions are formally tracked in the emergency preparedness tracking system and database described in EPIP-141 *Emergency Preparedness Program Administration*. Self-assessment, the ERAP, and other facets of emergency preparedness process maintenance are also described in EPIP-141.

ATTACHMENT A
ACRONYMS AND DEFINITIONS

Activation	Actions taken to staff and set up an emergency facility. Includes notification of emergency response personnel.
Alert	An Operational Emergency that is expected to have significant impacts (Protective Action Guide or Emergency Response Planning Guide-2 exceeded) beyond thirty meters from the release point, but less than 100meters and/or the facility boundary
AMS	Aerial monitoring system, part of the *Federal Radiological Emergency Response Plan.*
ARAC	Atmospheric release advisory capability, part of the *Federal Radiological Emergency Response Plan.*
ARES	Amateur radio emergency services network. Formerly known as RACES.
ARG	Accident response group, part of the *Federal Radiological Emergency Response Plan.*
Communicator!™	PC-based emergency notification system.
Contract 48	Prime Contract W-7 405-ENG-48 between the DOE and the University of California codifying the partnership that owns, manages, and operates LLNL.
DOE	U.S. Department of Energy
EAL	Emergency action level. Specific criteria which provide guidance to classify an Operational Emergency under conditions of limited real-time availability of event-specific data.
EBCC	Executive Business Coordination Center
ECC	The National Nuclear Security Administration/Livermore Site Office Emergency Communications Center

ED	Emergency director. The Laboratory emergency duty officer becomes the emergency director when the Emergency Operations Center is activated for an Operational Emergency. The emergency director directs the Laboratory's institutional response from the Emergency Operations Center.
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EMT	Emergency management team. The emergency director/Laboratory emergency duty officer, discipline managers and staff who report to the Emergency Operations Center during Operational Emergencies.
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPDEPC	Emergency Preparedness Drill and Exercise Planning Committee, which is composed of representatives from each LLNL emergency management team organization including Health Services and any offsite community partner organization that wants to participate in and help to plan drills and exercises.
EPHA	Emergency preparedness hazards assessment
EPI	Emergency public information
EPIP	Emergency plan implementing procedure
EPlan	The Lawrence Livermore National Laboratory Emergency Plan, UCRL-MA-113311, contains the emergency plan implementing procedures and contains the Site 300 management plan.
EPMC	Emergency Preparedness Management Committee, which was established to ensure high-level management attention in the multiple disciplines affecting emergency preparedness.
EPSL	Emergency Preparedness Section leader
EPZ	Emergency planning zone. For LLNL the emergency planning zone is defined as a two-mile planning area surrounding the plant site, concurrent with the local agencies existing emergency response planning zones.
ERAP	Emergency Readiness Assurance Plan – annual five year emergency preparedness report update and projection.

ERO	Emergency Response Organization. Primary and alternate management and support personnel trained to carry out emergency response activities according to the emergency plan and emergency preparedness implementing procedures.
ERPG	Emergency Response Planning Guideline (non-radiological threshold)
ES&H	Environment, safety, and health
FBI	Federal Bureau of Investigation
FRMAC	Federal Radiological Monitoring and Assessment Center, part of the *Federal Radiological Emergency Response Plan.*
FSP	Facility safety plan
HazMat	hazardous materials
HEPA	high-efficiency particulate air filter
HVAC	heating, ventilation, and air conditioning
IC	Incident Commander
IWS	Integrated worksheet
JIC	Joint Information Center
LEDO	Laboratory emergency duty officer – represents the Laboratory director. Onsite or on call at all times.
LLNL	Lawrence Livermore National Laboratory including the Livermore site and Site 300.
LTRAIN	Laboratory Training Records and Information Network
MOU	Memorandum of Understanding.
NARAC	National Atmospheric Release Advisory Center. A part of LLNL's Energy and Environment Directorate, supports the DOE, the Department of Defense, and the LLNL Emergency Operations Center by providing real-time assessments of the consequences from an atmospheric release of radioactive or toxic material.
NNSA	National Nuclear Security Administration of the DOE

NNSA/DOE HQ	National Nuclear Security Administration/Department of Energy headquarters
NNSA/LSO	National Nuclear Security Administration/Livermore Site Office
OES	Office of Emergency Services. The State of California, Alameda County, Contra Costa County, and San Joaquin County all operate independent Offices of Emergency Services with whom LLNL may interface during an Operational Emergency.
Operational	State of the Emergency Operations Center or any other emergency facility, once activated for an emergency, when minimum staffing and vital equipment are available to support the emergency response, as determined by the emergency director.
OSC	Operations support center. Operation support centers are operated as necessary by Environmental Protection Division, Hazards Control, Health/Medical, Plant Services, Public Affairs, Safeguards & Security, or Site 300.
OSP	Operational safety plan
PAG	Protective Action Guide (radiological threshold). PAG is defined as the fifty-year committed effective dose equivalent of one to five rem. At LLNL, the lowest value, one rem, is used for doses resulting from direct radiation or the uptake of materials that have a physical or biological half-life that is short compared to fifty years. Five rem is used for doses resulting from the uptake of long half-life materials. 100 rem is used as the threshold for early lethality.
RAP	Radiological Assistance Program, part of the *Federal Radiological Emergency Response Plan.*
Recovery	The operational phase following mitigation of an Operational Emergency. The recovery phase involves those actions taken, after a facility has been brought to a stable condition, to return the facility to normal operation. The recovery phase includes accident assessments and investigation, recovery planning and scheduling, and repair and restoration.
Reentry	Time-urgent actions performed during emergency response such as search and rescue, mitigation, damage control, and accident assessment

SAE	Site Area Emergency. An Operational Emergency that is expected to have significant impacts (protective action guide or emergency response planning guide RPG-2 exceeded) beyond the facility boundary, but not beyond the nearest site boundary
Shelter	Protective action taken to reduce exposure to a passing plume or to a plume containing easily filtered particulates such as transuranic compounds. Actions generally include closing doors and windows, turning off HVAC, and remaining indoors until an all clear is issued.
SSEP	Safety, Security & Environmental Protection Directorate at LLNL
TEEL	Temporary emergency exposure limit (non-radiological threshold). Values for airborne concentration thresholds of released materials which are based on requirements in the Occupational Safety and Health Administration, Environmental Protection Agency, and other exposure limits. Temporary Emergency Exposure Limit 2 (TEEL-2) is used for the classification of emergency events and the initiation of protective actions. Temporary Emergency Exposure Limit 3 (TEEL-3) is used as the threshold for early lethality.
Termination	Conclusion of an Operational Emergency, including declared emergencies, such as, Alert, Site Area Emergency, or General Emergency.
TSC	Technical Support Center
VEPWG	Valley Emergency Preparedness Working Group
WebEOC™	Emergency Operations Center information management system used to document occurrences during the course of an Operational Emergency.

ATTACHMENT B
INDEX OF EMERGENCY RESPONSE DOCUMENTS

Title	Location
LLNL Emergency Plan	EP Section
EPIP-41, Emergency Categorization & Classification	EP Section
EPIP-51, Emergency Notifications	EP Section
EPIP-61, Emergency Preparedness Hazards Survey and Hazards Assessment	EP Section
EPIP-71, Emergency Protective Actions and Reentry	EP Section
EPIP-91, Emergency Termination and Recovery	EP Section
EPIP-111, Activation and Operation of The Emergency Operations Center	EP Section
EPIP- 123, Emergency Response Organization	EP Section
EPIP- 131, Exercises	EP Section
EPIP-141, Emergency Preparedness Program Administration	EP Section
EPIP-142, Emergency Preparedness Document Development and Maintenance	EP Section
Site 300 Emergency Management Plan	Site 300
LLNL EPI Emergency Plan	PAO
LLLNL Emergency Public Information Procedure	PAO
LLNL *ES&H Manual,* Document 22.1, Emergency Management http://www.llnl.gov/es_and_h/esh-manual.	online

LLNL *ES&H Manual,* Document 22.2, Environmental Emergency Response	online
LLNL *ES&H Manual,* Document 22.3, Response Plan for Fire	online
In an Explosives Area	online
LLNL *ES&H Manual*, Document 22.4, Earthquakes	online
LLNL *ES&H Manual*, Document 22.5, Fire	online
LLNL *ES&H Manual*, Document 22.6, Exposure to Radiation in an Emergency	online
Environmental Protection Department - OSC – Operations Procedure	EPD OSC
Hazards Control Department OSC – Operations Procedure	HCD OSC
Hazards Control Department Field Monitoring Team Procedure	HCD OSC
Hazards Control Department Manual, Section 6: Emergency Response Procedures	ES&H Teams Division Office
Livermore Lab Hazardous Materials Response Plan	Firehouse
Response to Emergencies in the Superblock	Firehouse
Response to Injuries Involving Exposure to Hydrogen Cyanide	Firehouse
Emergency Notification for Control of Emergencies	Firehouse
Management Notification Chain for LLNL Emergencies	Firehouse
Central Alarm Station (CAS) Emergency Procedures	CAS
Security Conditions Order	SSD
Tactical Operations Center (TOC) Order	TOC
Operation of the Decontamination Facility, B663	HSD
Emergency Response in HSD	HSD
Emergency Communications Center Operations Plan	NNSA/LSO ECC

ECC Emergency Management Team Staffing Plan	NNSA/LSO ECC
LSO Duty Officer Plan and Procedures	Livermore Site Office

ATTACHMENT C
EP STANDARDS CROSS REFERENCE

Standard	Issue	LLNL Reference(s)
DOE Order 151.1 Change 2	**COMPREHENSIVE EMERGENCY MANAGEMENT SYSTEM**	**Emergency Plan and EPIPs**
I and II	DOE data	NA
III.3.a	Hazards Survey and Assessment	EPIP-61
III.3.c (1)	ERO, site response (EPC) Plan	Section 2
III.3.c (2)	Offsite Response Interfaces	Section 3
III.3.c (2)	MOUs	Section 3
III.3.c (3)	Emergency Categorization	Section 4
III.3.c (4)	Communications	Section 5
III.3.c (5)	Protective Actions	Section 7
III.3.c (6)	Medical Support	Section 8
III.3.c (7)	Public Information	Section 10 LLNL EPI Procedure
III.3.c (8)	Emergency Facilities and Equipment Plan	Section 11
III.3.c (9)	Program Administration	Section 14
III.4.a (1)	Training/drills assembly/evacuation	EPIP-123 EPIP-131
III.4.a (2)	Annual training – haz mat releases	EPIP-123
III.4.a (3)	Info and training on hazards for EMT	EPIP-123
III.4.b (1)	Building evacuation exercises	EPIP-131
III.4.b (2)	Annual communications test with HQ	LSO issue
III.5.a (1)	Re-entry planning	EPIP-123

Standard	Issue	LLNL Reference(s)
DOE Order 151.1 Change 2	**COMPREHENSIVE EMERGENCY MANAGEMENT SYSTEM**	**Emergency Plan and EPIPs**
	briefing/training	
III.5.a (2)	Notification	Plan Section 5 EPIP-51
III.5.b	Recovery notification	EPIP-91 EPIP-51
IV.	Haz mat program	HC OSC Plan EPD OSC Plan
V.3.a, b, c	Alert, Site Area and General Emergency	Section 4
VI.	Energy Emergency Program	NA
VII.	Emergency Assistance Program	NA
VIII.3	Notification demo in exercises	EPIP-131
VIII.4.a.1.a	Notify State, local, DOE Field and HQ within 15 minutes	Section 5 EPIP-51
VIII.4.b	Status reports (IC to EMT)	EPIP-111
VIII.4.c	Responder comm. IC, EMT, OSCs	EPIP-111
VIII.4.d	Final Emergency Report	EPIP-91
VIII.4.e	Recovery Reporting	EPIP-91
VIII.4.f	Report/release review for classified/UCNI	LLNL EPI Procedure
IX.	Public Affairs Policy and Planning	Section 10 LLNL EPI Procedure
X.3.a, b	Planning and preparedness activities	ERAP EPIP-141
X.4.a	Annual internal assessment	EPIP-141
X.4.d	Single, external, annual review	EPIP-141
XI.1	EPC designation	Section 14
XI.2	Classification/UCNI review of EP docs	EPIP-142
XI.3	Document the Emer. Management Program	Section 1
XI.4	Implementing Procedures	EPlan Att. B

Standard	Issue	LLNL Reference(s)
DOE Order 151.1 Change 2	**COMPREHENSIVE EMERGENCY MANAGEMENT SYSTEM**	**Emergency Plan and EPIPs**
XI.5	Tracking system	EPIP-141
XI.6	Records protection	EPIP-91 EPIP-141
Att. 1,1	Requirements	Contract 48 EPlan Att. C
Att. 1,2	Hazards surveys, assessments	EPIP-61
Att. 1,3	Operational Emergency Base Program	ES&H Manual II,22.1
Att. 1,4	EPZ, Emergency management	Section 2 Section 6 Section 14 EPIP-41
Att. 1	ERAP	EPIP-141 ERAP
Att. 1,5	Annual assessment	EPIP-141
Att. 1,6	Tracking system	EPIP-141
Att. 1,7	EP administrator Plan	Section 2 Section 14
Att. 1,8	Agreements and MOUs	Section 3
Att. 1,12	Integrate public information in the Plan	Section 10 LLNL EPI Procedure
DOE G 151.1-1, Vol. V - 8/21/97		
2.2 p 2-2 (not 2-13)	Emergency Plan Table of Contents	TOC EPlan
2.2.1	Summary and Introduction	Section 1
2.2.2	ERO (Internal)	Section 2
2.2.3	Offsite Response Interfaces	Section 3
2.2.4	Emergency Categorization	Section 4 EPIP-41
2.2.5	Notifications and Communication	EPlan Section 5 EPIP-51 EPIP-111
2.2.6	Consequence Assessment	Section 6 EPIP-61 HC OSC Plan

Standard	Issue	LLNL Reference(s)
DOE Order 151.1 Change 2	**COMPREHENSIVE EMERGENCY MANAGEMENT SYSTEM**	**Emergency Plan and EPIPs**
2.2.7	Protective Actions and Reentry	EPlan Section 7 EPlan Section 9 EPIP-71
2.2.8	Emergency Medical Support	EPlan Section 8 Medical OSC Plan
2.2.9	Public Information	EPlan Section 10 EPI Emergency Plan LLNL EPI Procedure
2.2.10	Emergency Termination and Recovery	EPlan Section 9 EPIP-91
2.2.11	Emergency Facilities and Equipment	EPlan Section 11 EPIP-111
2.2.12	Training, Drills	EPlan Section 12 EPIP-123
2.2.13	Exercises	EPlan Section 13 EPIP-131
2.2.14	EP Administration	EPlan Section 14
2.2.14 (*appendices)	Appendices Acronyms and Definitions Agreements Emergency Management Team References	EPlan Att. A (Acron.) EPlan Att. C (X-Ref.) EPlan Att. D (MOUs) Eplan Section 2 EPlan Section 3 ERAP
3.3.2	Hazardous Material Program	EPIP-141 ERAP
DOE O 440.1A	Medical Services	EPlan Section 8

ATTACHMENT D
MEMORANDA OF UNDERSTANDING

MOU/MOA Parties	Summary of Agreement	Responsible for update/ renewal	Last Update	Exp.Date	MOU Location
Univ. of Calif.; LLNL & Valley Care Health Systems	Assist each other in case of LLNL radiological incident. Participate in regular joint training and exercises.	EP Section	2002	Indefinite	EP Section files and HSD
Univ. of Calif.; LLNL & Eden Hospital Medical Center	Assist each other in case of LLNL radiological incident. Participate in regular joint training and exercises.	EP Section	2002	Indefinite	EP Section files and HSD
Alameda County Sheriff's Dept., NNSA/LSO, LLNL S&S Department	Emergency Response Agreement between Alameda County Sheriff's Dept. and LLNL S&S.	Protective Force Division and Office of Program Planning	June 2002	Indefinite	S&S Department
Calif. Highway Patrol (Golden Gate Div.), NNSA/LSO,	Emergency Response Agreement	Protective Force Division and Office of	Oct. 2001	Indefinite	S&S Department

MOU/MOA Parties	Summary of Agreement	Responsible for update/ renewal	Last Update	Exp.Date	MOU Location
LLNL S&S Department	between Calif. Highway Patrol and LLNL S&S.	Program Planning			
Federal Bureau of Investigation (SF Office), NNSA/LSO, and LLNL S&S Department	Joint Response Agreement between between FBI & LLNL S&S.	Protective Force Division and Office of Program Planning	Oct. 2001	Indefinite	S&S Department
Livermore Police Dept., NNSA/LSO, and LLNL S&S Department.	Law Enforcement assistance between Livermore Police Department and LLNL S&S.	Protective Force Division and Office of Program Planning	Oct. 2001	Indefinite	S&S Department
San Joaquin County Sheriff's Dept. & LLNL S&S Department.	Law Enforcement Mutual Aid to the LLNL Site 300.	Protective Force Division and Office of Program Planning	Dec. 1994	Indefinite	S&S Department
Sandia National Laboratory - Livermore, NNSA/LSO, and LLNL S&S Department	Security Assistance between Sandia Nat. Lab.-Livermore and LLNL S&S.	Protective Force Division and Office of Program Planning	Oct. 2001	Indefinite	S&S Department

MOU/MOA Parties	Summary of Agreement	Responsible for update/ renewal	Last Update	Exp.Date	MOU Location
Alameda County Fire Dept., Alameda County Emergency Medical Services Agency, Alameda City Fire Dept., Regents of Univ. of California, DOE, and LLNL Fire Department.	Emergency Dispatch Mutual Aid between LLNL and listed agencies.	LLNL Emergency Mgmt. Division	Jan. 2002	Indefinite	Emer. Mgmt. Div.
Alameda County Fire Dept., Alameda County Sheriff's Dept. Specialized Services Section, Cities of Alameda, Albany, Berkeley, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, Union City, Dougherty Regional Fire Protection Authority, East Bay Regional Parks Fire Dept., U.S. Dept. of the Army, Parks Reserve Forces Training Area, State of Calif., Dept. of Forestry and Fire Protection, Regents of the Univ. of Calif, LBL, LLNL, and Veteran's Admin. Hospital –	Fire Assistance Mutual Aid amongst parties to the MOU.	LLNL Emergency Mgmt. Division		Indefinite	Emer. Mgmt. Div.

MOU/MOA Parties	Summary of Agreement	Responsible for update/ renewal	Last Update	Exp.Date	MOU Location
Livermore.					
State of Calif., Office of Emergency Services; State of Calif., Dept. of Forestry and Fire Protection; U.S. Dept. of Agriculture Forest Service, Pacific Southwest Region; U.S. Dept. of Interior Bureau of Land Mgmt., Calif. State Office; U.S. Dept. of Interior Nat. Parks Service, Pacific West Region; U.S. Dept. of Interior Fish and Wildlife Service, Calif.-Nevada Operations.	Agreement for Local Government Fire Suppression Assistance to Forest Agencies. Note: LLNL is not a signatory to this agreement, but is a participating agency.	Not Applicable	May 2002	1 Dec 2006	Emer. Mgmt. Div
Lawrence Berkeley Nat. Laboratory – Environmental, Health & Safety Div., Field Support Dept. and LLNL Emer. Mgmt. Division	Fire Alarm monitoring & Dispatch, & Alpha Numeric Paging for Lawrence Berkeley Nat. Laboratory.	Emer. Mgmt. Div	19 Jan 1996	Indefinite	Emer. Mgmt. Div.

MOU/MOA Parties	Summary of Agreement	Responsible for update/ renewal	Last Update	Exp.Date	MOU Location
City of Livermore and LLNL	Emer. notification agreement between City and LLNL Emer. Mgmt. Div.	Emer. Mgmt. Div.	29 Apr 1998	Indefinite	Emer. Mgmt. Div.
Regents of Univ. of Calif., Dept of Energy, City of Livermore, & LLNL	Agreement regarding Mutual Fire Protection Resources.	Emer. Mgmt. Div.	18 Dec 1992	Indefinite	Emer. Mgmt. Div.
Regents of Univ. of Calif., Dept of Energy, City of Livermore & LLNL	Agreement for automatic mutual reciprocal Fire Dept. assistance.	Emer. Mgmt. Div.	26 Aug 1986	Indefinite	Emer. Mgmt. Div.
Regents of Univ. of Calif., Alameda County Fire Dept., Dept. of Energy, & LLNL	Agreement for automatic mutual reciprocal Fire Dept. assistance.	Emer. Mgmt. Div	12 Sept. 1994	Indefinite	Emer. Mgmt Div.
Regents of Univ. of Calif., Alameda County Fire Dept., Alameda County Emergency Medical Service Agency, Dept. of Energy, & LLNL	Agreement for Interim County Medical Assistance	Emer. Mgmt. Div	28 Nov 2000	Interim basis until services can be placed on a permanent basis.	Emer. Mgmt. Div.
Alameda County & LLNL	Agreement for Mutual Assistance and Emergency Management	Emer. Mgmt. Div.	1 Apr 1998	1 April 2003	Emer. Mgmt. Div.

MOU/MOA Parties	Summary of Agreement	Responsible for update/ renewal	Last Update	Exp.Date	MOU Location
Alameda County & LLNL	Agreement for Emergency Notification	Emer. Mgmt. Div.	26 May 1998	Indefinite	Emer. Mgmt. Div.
Calif. Dept. of Forestry & Fire Protection and LLNL Fire Dept.	MOU for mutual assistance	Emer. Mgmt. Div.	29 June 1998	Indefinite	Emer. Mgmt. Div.
Alameda County Fire Dept.; City of Livermore; City of Pleasanton; Doughtery Regional Fire Authority U.S. Dept. of the Army, Parks Reserve Forces Training Area; San Ramon Fire Protection District; Calif. Dept. of Forestry & Fire Protection; Regents of Univ. of Calif.; DOE; Veteran's Admin. Hospital (Livermore); and LLNL	Agreement for Mutual Fire Assistance	Emer. Mgmt. Div.	10 Jan 1995	Indefinite	Emer. Mgmt. Div.
Regents of Univ. of California (LLNL Fire Dept. acting for); Atomic Energy Commission; and City of Tracy	Agreement for Mutual Fire Assistance	Emer. Mgmt. Div.	4 Mar 1969	Indefinite	Emer. Mgmt. Div.

MOU/MOA Parties	Summary of Agreement	Responsible for update/ renewal	Last Update	Exp.Date	MOU Location
State of California; Various departments, agencies, political subdivisions, municipal corporations and other public agencies of the State of California	California Disaster and Civil Defense Master Mutual Aid Agreement	Emer. Mgmt. Div.	15 Feb 1950	Indefinite	Emer. Mgmt. Div.
Sandia National Labs, California and LLNL	Agreement regarding LLNL's commitments for Emergency Response to Sandia Lab, Calif.	Emer. Mgmt. Div.	27 Aug 1993	Indefinite	Emer. Mgmt. Div.
California Highway Patrol and LLNL	Interagency agreement for response to hazardous material spills	Emer. Mgmt. Div.	7 Oct 1993	Indefinite	Emer. Mgmt. Div.
City and County of San Francisco and Atomic Energy Commission	Agreement for Primary Water Service, Contract No. AT(04-3) –269	Emer. Mgmt. Div.	16 Jan 1969	Indefinite	Emer. Mgmt. Div.
State of California, Office of Emergency Services; LLNL Fire Dept.	Agreement for Temporary Transfer of Vehicular Equipment	Emer. Mgmt. Div.	18 Feb 1992	Indefinite	Emer. Mgmt. Div.
State of California Office of Emergency Services; LLNL Fire Dept.	Agreement for use of Radio Equipment	Emer. Mgmt. Div.	18 Feb 1992	Indefinite	Emer. Mgmt. Div.
Univ. of California at Davis Applied Sciences Facility at Livermore; LLNL Fire Dept.	Agreement for Safety Services	Emer. Mgmt. Div.	30 Mar 1977	Indefinite	Emer. Mgmt. Div.